LBT-V502/V502CD/V502CDM

SERVICE MANUAL

AEP Model
UK Model
E Model
Australian Model

- LBT-V502/V502CD/V502CDM is composed of follwing models. As for the service manual, it is issued for each component model, then, please refer to it.

COMPONENT MODEL NAME

SYSTEM NUMBER / COMPONENT	LBT-V502 (AEP, WG, IT)	LBT-V502 (E2)	LBT-V502 (E3, Saudi, AUS)	LBT-V502CD (UK)	LBT-V502CDM (UK)
TUNER	ST-V502	ST-V502	ST-V502	ST-V502	ST-V502
STEREO DECK AMPLIFIER	DXA-V502	DXA-V502	DXA-V502	DXA-V502	DXA-V502
SPEAKER SYSTEM	SS-A502	SS-D502AV	SS-D502AV	SS-A502	SS-A502
TURNTABLE SYSTEM	———	PS-V702P	———	PS-LX44P	PS-LX44P
CD PLAYER	———	———	———	CDP-M48	CDP-C301M

PARTS LIST

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- WG : West Germany model
IT : Italian model
Saudi : Saudi Arabia model

AUS : Australian model
E2 : E model with turntable system
E3 : E model without turntable system

ACCESSORY & PACKING MATERIAL

Part No.	Description
1-465-455-11	REMOTE COMMANDER (RM-S530)
1-501-369-11	(AEP, UK)...ANTENNA
1-501-374-11	ANTENNA, LOOP
1-575-668-11	CORD (WITH CONNECTOR)
3-701-806-00	(UK, E2)...ADAPTOR, 45, (E)
3-707-584-01	COVER, BATTERY (for RM-S530)
3-751-553-11	(AEP)...MANUAL, INSTRUCTION
3-751-553-41	(AEP)...MANUAL, INSTRUCTION
3-751-553-51	(AEP)...MANUAL, INSTRUCTION
3-751-553-61	(E2, E3, Saudi, AUS)...MANUAL, INSTRUCTION
3-751-553-71	(Saudi)...MANUAL, INSTRUCTION
3-751-555-51	(E2)...MANUAL, INSTRUCTION (PS-V702P)
4-895-478-01	(E2)...INNER PLATE (for PS-V702P)
*4-896-228-01	(E2)...CUSHION (R) (for PS-V702P)
*4-896-229-01	(E2)...CUSHION (L) (for PS-V702P)
*4-896-384-01	(UK)...CUSHION (R) (for PS-LX44P)
*4-896-385-01	(UK)...CUSHION (L) (for PS-LX44P)
*4-914-075-01	CUSHION (SP)
4-920-940-01	SHEET, PROTECTION (for ST-V502)
4-921-934-01	SHEET, PROTECTION (for DXA-V502)
*4-934-860-01	CUSHION (for ST-V502)
*4-935-383-01	CUSHION (for DXA-V502)
*4-937-343-01	(AEP, AUS)...INDIVIDUAL CARTON
*4-937-344-01	(UK:V502CD)...INDIVIDUAL CARTON
*4-937-345-01	(UK:V502CDM)...INDIVIDUAL CARTON
*4-937-347-01	(E2)...INDIVIDUAL CARTON
*4-937-348-01	(E3, Saudi)...INDIVIDUAL CARTON

COMPACT HI-FI STEREO SYSTEM

SONY®

MICROFILM

9-955-676-11

Sony Corporation
Audio Group

English
90C1660-1
Printed in Japan

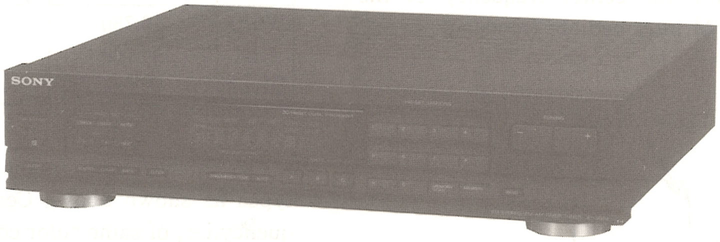
©1990.3

Published by Customer Relations and Service Group

ST-V502

SERVICE MANUAL

AEP Model
UK Model



This set is FM stereo/FM-AM Tuner section in LBT-V502/V502CD/V502CDG.

SPECIFICATIONS

Tuner	
System	FM stereo FM/AM superheterodyne tuner
FM tuner section	
Tuning range	87.5 to 108 MHz
Antenna	75 ohms unbalanced
Intermediate frequency	10.7 MHz
MW/LW tuner section	
Tuning range	MW: 522 to 1,611kHz (Italian model) 531 to 1,602kHz (other models) LW: 144 to 288kHz (Italian model) 153 to 279kHz (other models)
Antenna	AM loop antenna External antenna terminal
Intermediate frequency	450 kHz
Power requirements	240V AC, 50Hz (UK model) 220V AC, 50Hz (other models)
Power consumption	10 W
AC outlet	2 switched, total 500 W max.
Weight	Approx. 2.4 kg
Dimensions	Approx. 355 × 80 × 312 mm (w/h/d, including projections)

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

MICROFILM

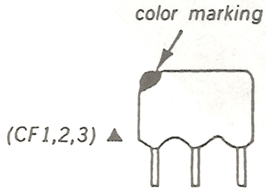
FM STEREO/FM-AM TUNER

SONY®

SECTION 1
SERVICING NOTES

Note on Ceramic Filter (CF1,2,3) ▲ Replacement.

This set employs three ceramic filters (CF1,2,3) ▲ which should have the same color marking to identify their center frequency. Therefore FM IF offset adjustment by ∗ D609, ∗ D610 is necessary to match the center frequency of the ceramic filters used with FM intermediate frequency.



○ : Mounted
× : not Mounted

Ceramic filter		Mount		FM intermediate frequency (MHz)
Color mark	Center frequency (MHz)	∗ D609	∗ D610	
White	10.750	○	×	10.750
Red	10.700	×	×	10.700
Black	10.650	×	○	10.650

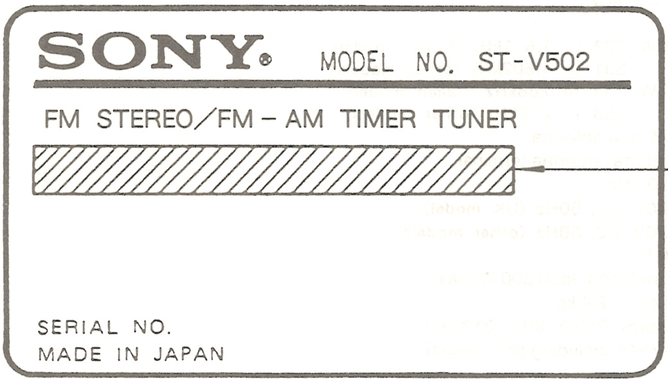
FM intermediate frequency is determined by the three types as shown above, Ceramic filters of same center frequency,i.e., of same color coding should be used for CF1, CF2, and CF3.

When replacing the ceramic filters, perform the FM Discriminator Adjustment.

▲ : AEP, UK Model : CF1, 2
WG, IT Model : CF1, 2, 3

MODEL IDENTIFICATION

– Specification Label –



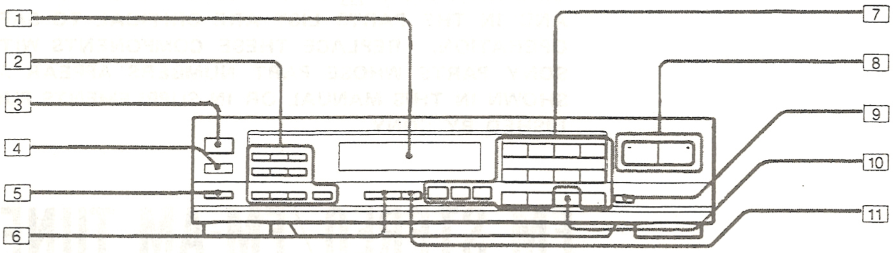
SONY® MODEL NO. ST-V502

FM STEREO/FM – AM TIMER TUNER

SERIAL NO.
MADE IN JAPAN

AEP, West Germany,
Italian Model : AC : 220V ~ 50/60 Hz
UK Model : AC : 240V ~ 50/60 Hz

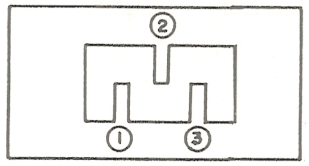
LOCATION OF CONTROLS



1	Display window
2	Buttons for setting the clock and timer
3	SYSTEM POWER switch
4	Remote sensor
5	SLEEP button
6	FREQUENCY/TIME button
7	Buttons for storing station frequencies
8	TUNING buttons
9	BAND selector
10	MEMORY SCAN button
11	AUTO tuning button

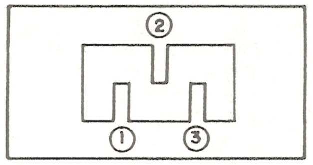
Signal of System Control Connector

CNJ901
SYSTEM CONTROL 1



1	L-CH OUT
2	GND
3	R-CH OUT

CNJ701
SYSTEM CONTROL 2



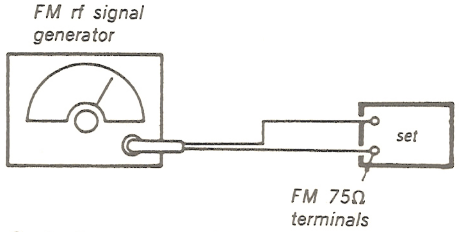
1	AUB
2	GND
3	

SECTION 2
ELECTRICAL ADJUSTMENTS

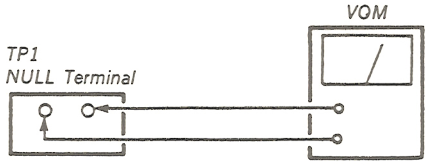
FM SECTION

FM DISCRIMINATOR ADJUSTMENT

Setting:


FM rf signal generator
set
FM 75Ω terminals

Carrier frequency : 98MHz
Modulation : 1kHz, 40kHz deviation (100%)
Output level : 1mV (60dB)


VOM
TP1
NULL Terminal

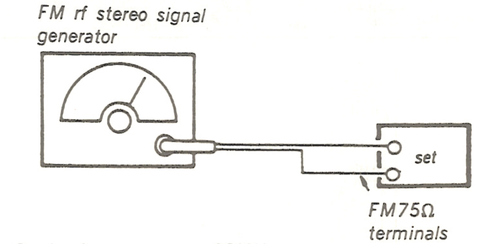
Procedure :

1. Tune the set to 98MHz.
2. Adjust T21 for 0V reading on the VOM.

Note : FM tuning level adjustment should be made after FM discriminator alignment.

FM TUNING LEVEL ADJUSTMENT

Setting :


FM rf stereo signal generator
set
FM75Ω terminals

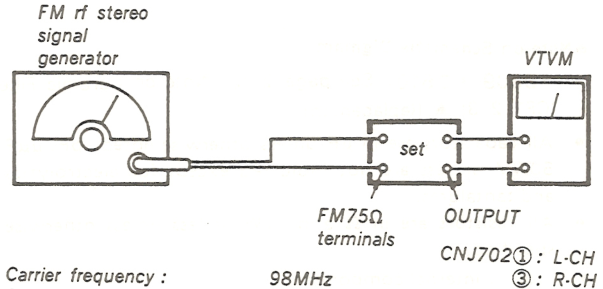
Carrier frequency : 98MHz
Modulation : 1kHz, 40kHz deviation (100%)
Output level : 17.8μV (25dB)

Procedure :

1. Tune the set to 98MHz.
2. Adjust RV24 so that the TUNED LED goes on.

FM STEREO SEPARATION ADJUSTMENT

Procedure :


FM rf stereo signal generator
VTVM
set
FM75Ω terminals
OUTPUT
CNJ702①: L-CH
③: R-CH

Carrier frequency : 98MHz
Output level : 1mV (60dB)
Modulation
Audio 400Hz : 16.25kHz deviation
Sub channel 38kHz : 16.25kHz deviation
Pilot signal 19kHz : 7.5kHz deviation

FM stereo signal generator output channel	VTVM connection	VTVM reading (dB)
L-CH	L-CH	Ⓐ
R-CH	L-CH	Ⓑ Adjust RV21 for minimum reading.
R-CH	R-CH	Ⓒ
L-CH	R-CH	Ⓓ Adjust RV21 for minimum reading.

L-CH Stereo separation : Ⓐ−Ⓑ
R-CH Stereo separation : Ⓒ−Ⓓ

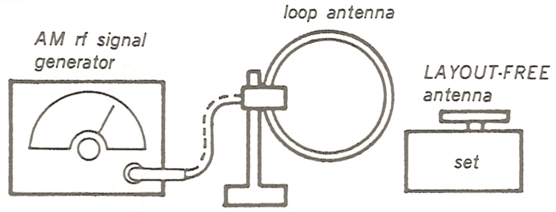
The separations of both channels should be equal.

MW/LW SECTION

AM TUNING LEVEL ADJUSTMENT

BAND select switch : LW

Setting :


loop antenna
AM rf signal generator
LAYOUT-FREE antenna
set

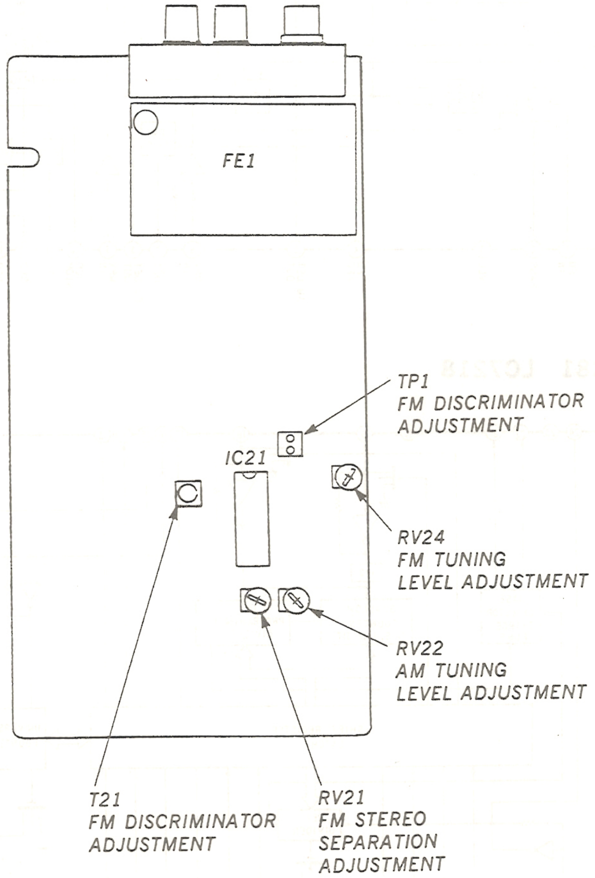
Carrier frequency : 216kHz
Modulation : 400Hz, 30% modulation

Procedure :

1. Set loop antenna so that the LAYOUT-FREE antenna input level becomes 2.5mV/m (68dB).
2. Tune the set to 216kHz.
3. Adjust the RV22 so that the TUNED LED goes on.

Adjustment Location :

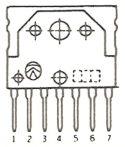
—tuner board—


FE1
IC21
TP1
FM DISCRIMINATOR ADJUSTMENT
RV24
FM TUNING LEVEL ADJUSTMENT
RV22
AM TUNING LEVEL ADJUSTMENT
T21
FM DISCRIMINATOR ADJUSTMENT
RV21
FM STEREO SEPARATION ADJUSTMENT

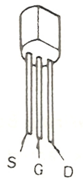
SECTION 3
DIAGRAMS

3-1. SEMICONDUCTOR LEAD LAYOUTS

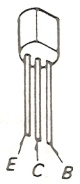
LA5667



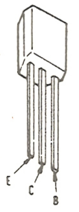
2SK246-GR3



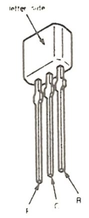
2SB1116A-L



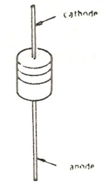
DTA144ES
DTC114ES
2SA1317-STU
2SC2603-EF
2SC2669-OY
2SC3113-A
2SC3330-STU
2SC3402



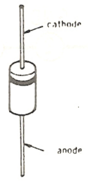
2SC2785-HFE


letter side
E
C
B

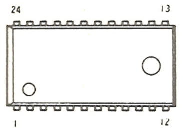
HZS27-2L
1SS120


cathode
anode

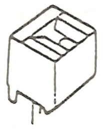
UZP-6.8B
10E2N


cathode
anode

LC7218

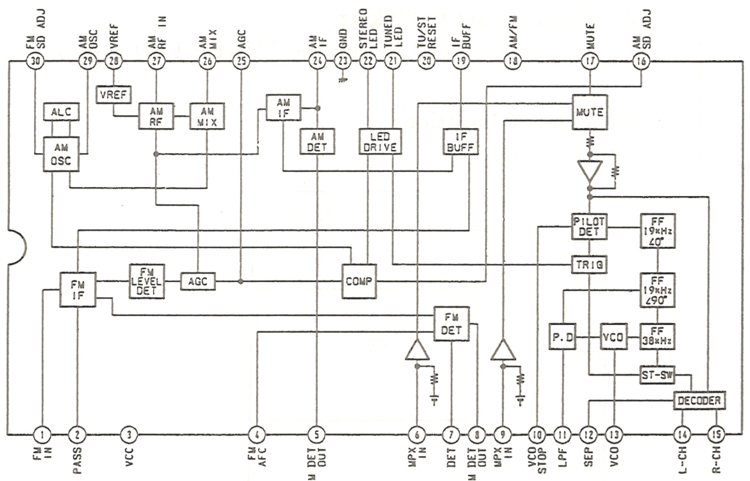


GP1U52XB

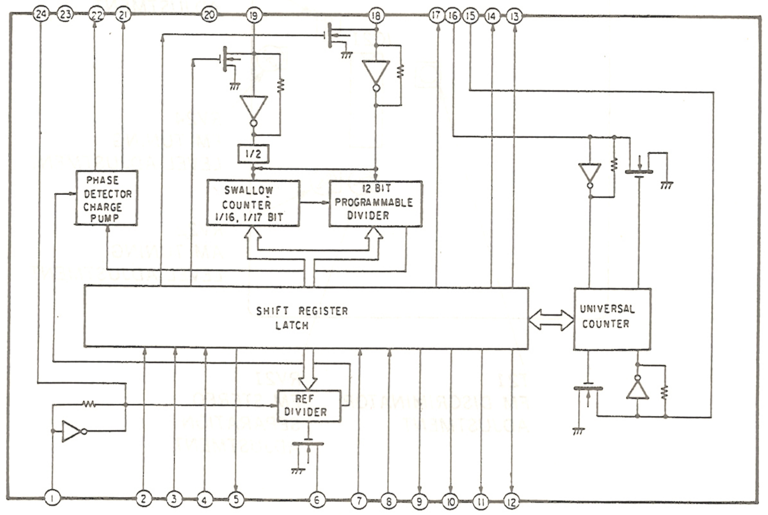


3-2. IC BLOCK DIAGRAMS

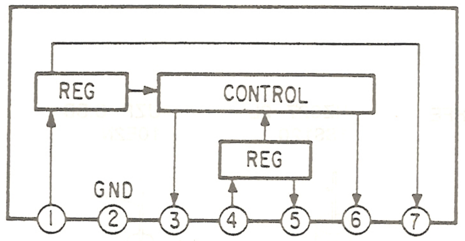
IC21 LA1851N


FM SD ADJ
AM OSC
VREF
AM RF IN
AM MIX
AGC
AM IF
GND
STEREO LED
TUNED LED
TU/ST RESET
IF BUFF
AM/FM
MUTE
AM SD ADJ
ALC
AM OSC
VREF
AM RF
AM MIX
AM IF
AM DET
LED DRIVE
IF BUFF
MUTE
PILOT DET
FF 19kHz ∠0°
TRIG
FF 19kHz ∠90°
P.D
VCO
FF 38kHz
ST-SW
DECODER
FM IF
FM LEVEL DET
AGC
COMP
FM DET
FM IN
PASS
VCC
FM AFC
AM DET OUT
MPX IN
DET
FM DET OUT
MPX IN
VCO STOP
LPF
SEP
VCO
L-CH
R-CH

IC81 LC7218


PHASE DETECTOR CHARGE PUMP
1/2
SWALLOW COUNTER 1/16, 1/17 BIT
12 BIT PROGRAMMABLE DIVIDER
SHIFT REGISTER LATCH
UNIVERSAL COUNTER
REF DIVIDER

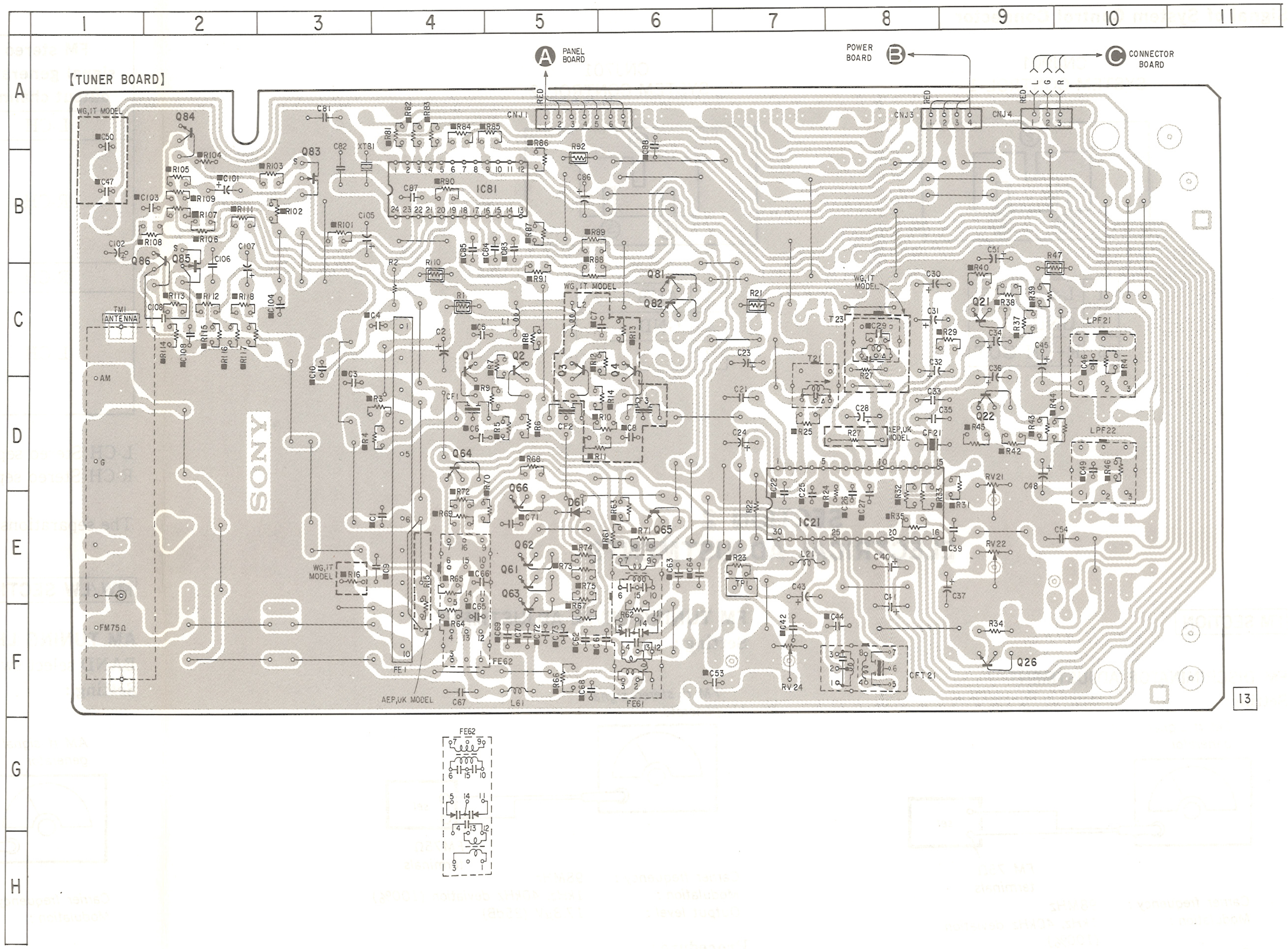
IC701 LA5667


REG
CONTROL
REG
GND
1
2
3
4
5
6
7

3-3. TUNER SECTION PRINTED WIRING BOARD

• Semiconductor Location

Ref. No.	Location
D61	E-5
IC21	E-8
IC81	B-4
Q1	D-4
Q2	D-5
Q3	D-5
Q4	D-6
Q21	C-9
Q22	D-9
Q26	F-9
Q61	E-5
Q62	E-5
Q63	F-6
Q64	D-4
Q65	E-6
Q66	E-5
Q81	C-6
Q82	C-6
Q83	B-3
Q84	A-2
Q85	C-2
Q86	C-2


1
2
3
4
5
6
7
8
9
10
11
A
B
C
D
E
F
G
H
[TUNER BOARD]
A PANEL BOARD
POWER BOARD B
C CONNECTOR BOARD
CNJ1
CNJ3
CNJ4
IC81
IC21
SONY
TM1 ANTENNA
AM
G
FM75Ω
WG,IT MODEL
AEP,UK MODEL
FE1
FE61
FE62
CF21
LPF21
LPF22
T21
T23
RV21
RV22
RV24
Q84
Q83
Q85
Q86
Q81
Q82
Q1
Q2
Q3
Q4
Q64
Q66
D61
Q65
Q62
Q61
Q63
Q21
Q22
Q26
13

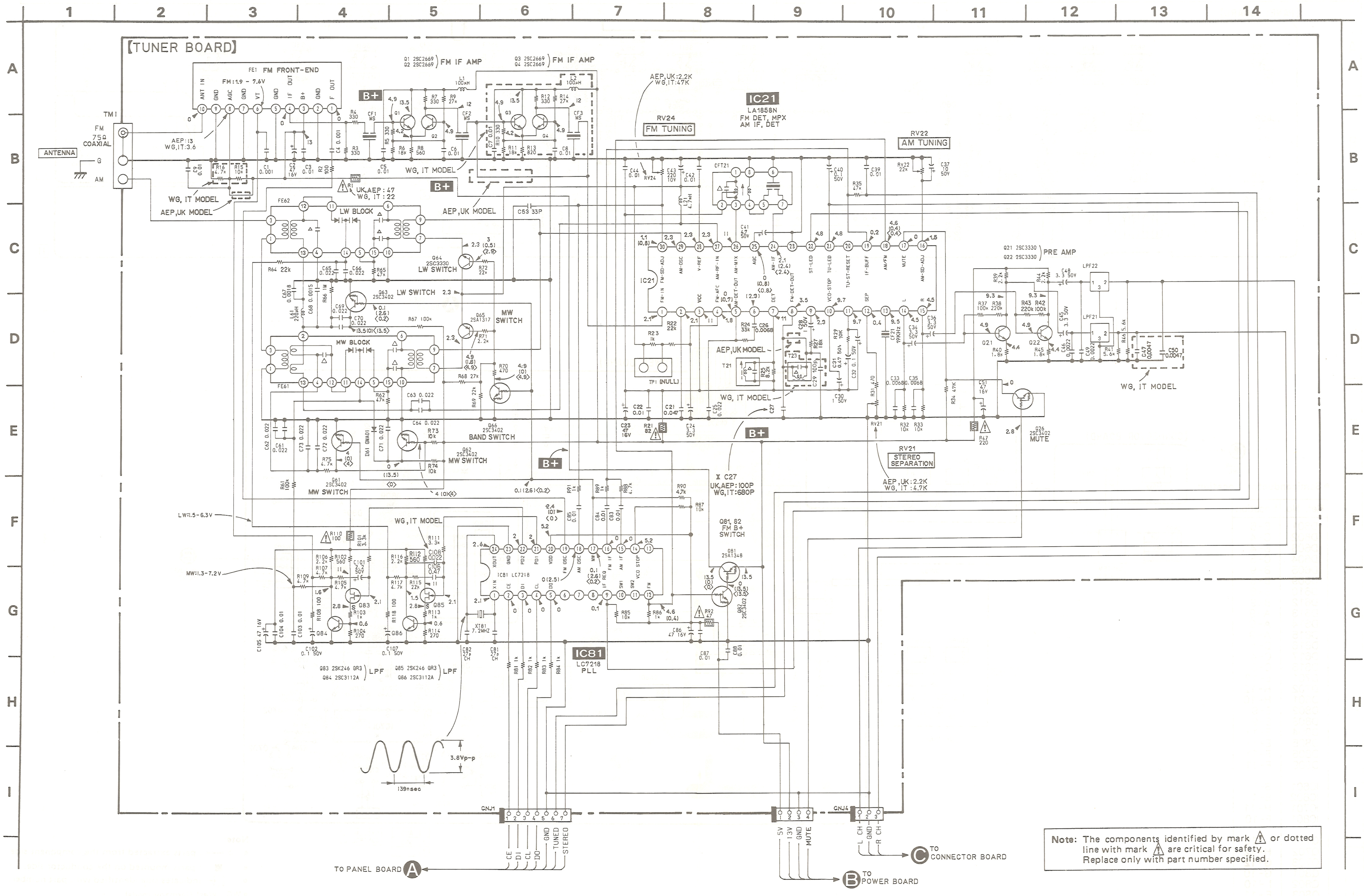
• Note on Printed Wiring Board

- ○—— : parts extracted from the component side.
- ■ : parts mounted on the conductor side.
- [ ]- indicates side identified with part number.
- WG: West Germany model
- IT: Italian model

• Note on Schematie Digmam

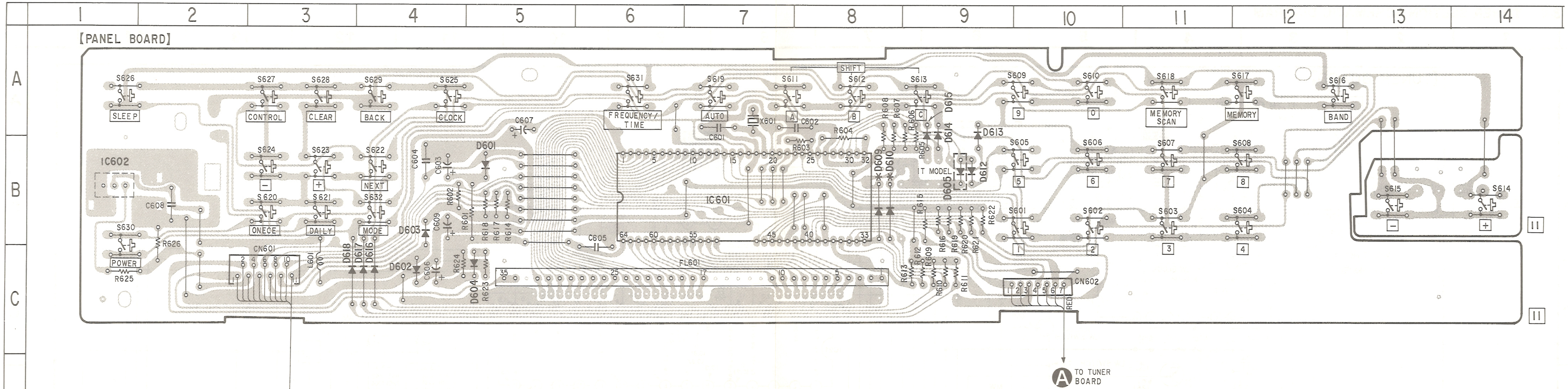
- *D609, *D610: See page 2 for Note on Ceramic Filter (CF1, 2, 3) ▲ Replacement.
- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼W or less unless otherwise specified.
- △ : internal component.
- ▭ : nonflammable resistor.
- B+ : B+ Line
- B– : B– Line
- ▭ : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  - no mark : FM
  - ( ) : AM
  - 〈 〉 : LW
- Voltages are taken with a VOM (Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  - ⇨ : FM
- WG: West Germany model
- IT : Italian model

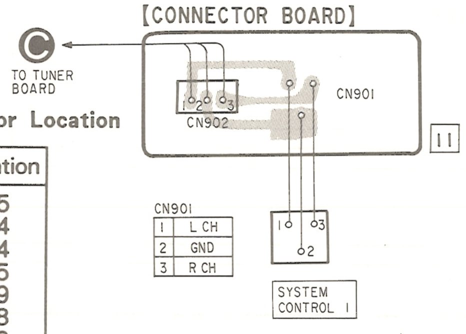
3-4. TUNER SECTION SCHEMATIC DIAGRAM

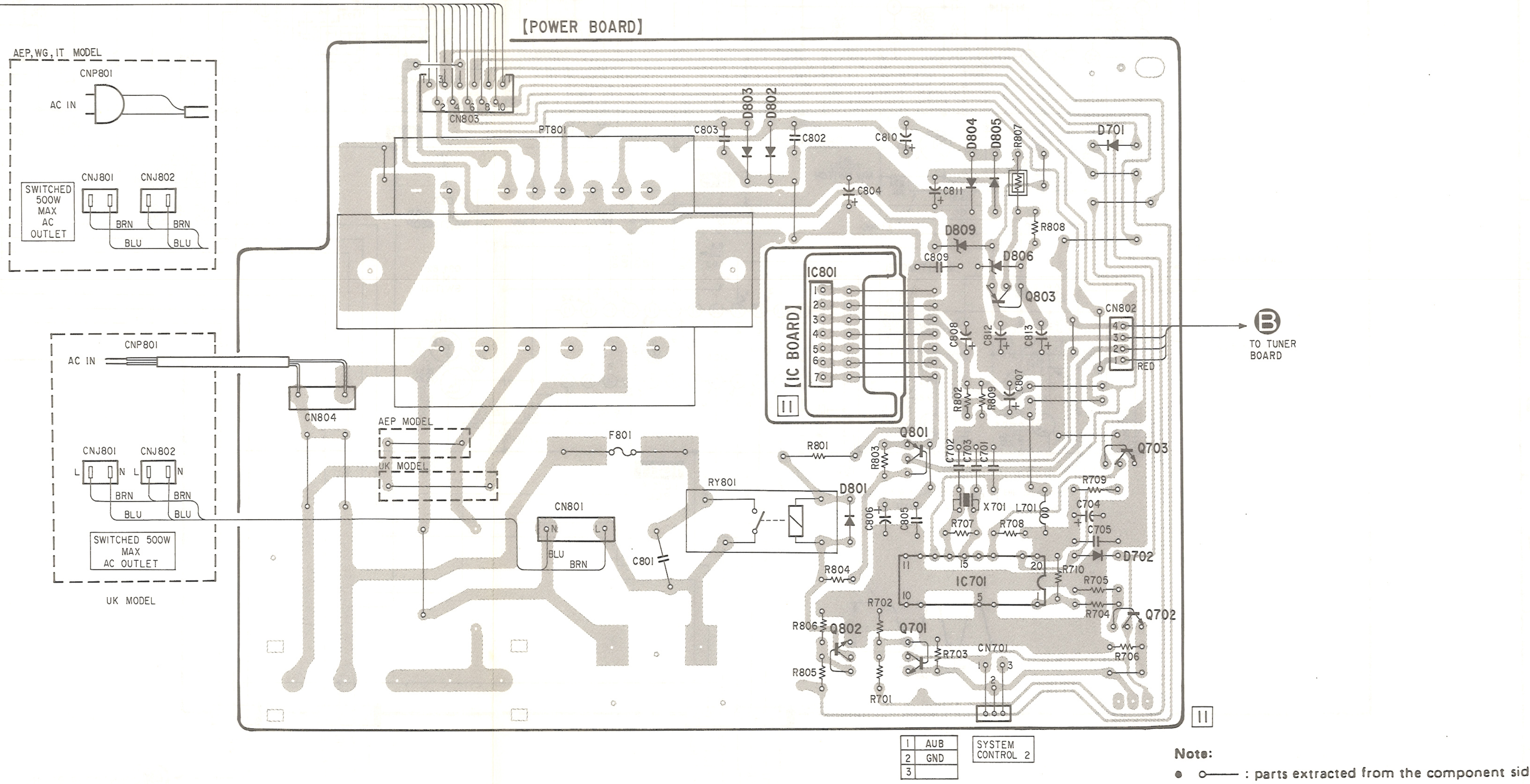

【TUNER BOARD】
FE1 FM FRONT-END
FM:1.9 - 7.6V
ANTENNA
TM1
FM 75Ω COAXIAL
G
AM
Q1 2SC2669
Q2 2SC2669
FM IF AMP
Q3 2SC2669
Q4 2SC2669
FM IF AMP
B+
WG, IT MODEL
AEP,UK MODEL
AEP:13
WG,IT:3.6
UK,AEP:47
WG, IT:22
FE62
LW BLOCK
FE61
MW BLOCK
Q64 2SC3330 LW SWITCH
Q63 2SC3402 LW SWITCH
Q65 2SA1317 MW SWITCH
Q66 2SC3402 BAND SWITCH
Q62 2SC3402 MW SWITCH
Q61 2SC3402 MW SWITCH
C53 33P
RV24 FM TUNING
AEP,UK:2.2K
WG,IT:47K
IC21
LA1858N
FM DET, MPX
AM IF, DET
CFT21
RV22 AM TUNING
TP1 (NULL)
AEP,UK MODEL
T21
T23
Q21 2SC3330
Q22 2SC3330
PRE AMP
LPF22
LPF21
WG, IT MODEL
Q26 2SC3402 MUTE
RV21 STEREO SEPARATION
AEP,UK:2.2K
WG,IT:4.7K
X C27
UK,AEP:100P
WG,IT:680P
Q81, 82 FM B+ SWITCH
Q81 2SA1348
Q82 2SC3402
LW:1.5-6.3V
MW:1.3-7.2V
WG,IT MODEL
IC81 LC7218
IC81 LC7218 PLL
X181 7.2MHZ
Q83 2SK246 GR3
Q84 2SC3112A
LPF
Q85 2SK246 GR3
Q86 2SC3112A
LPF
3.8Vp-p
139nsec
CNJ1
CE
DI
CL
DO
GND
TUNED
STEREO
TO PANEL BOARD Ⓐ
5V
13V
GND
MUTE
TO POWER BOARD Ⓑ
CNJ4
L CH
GND
R CH
TO CONNECTOR BOARD Ⓒ
1 2 3 4 5 6 7 8 9 10 11 12 13 14
A B C D E F G H I

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

3-5. CONTROL AND POWER SUPPLY SECTION PRINTED WIRING BOARDS


1
2
3
4
5
6
7
8
9
10
11
12
13
14
A
B
C
[PANEL BOARD]
S626
SLEEP
S627
CONTROL
S628
CLEAR
S629
BACK
S625
CLOCK
S631
FREQUENCY/TIME
S619
AUTO
S611
A
SHIFT
S612
B
S613
C
S609
9
S610
0
S618
MEMORY SCAN
S617
MEMORY
S616
BAND
IC602
C608
S624
−
S623
+
S622
NEXT
S620
ONECE
S621
DAILY
S632
MODE
S630
POWER
R626
R625
CN601
L601
D618
D617
D616
D602
D603
D601
D604
C604
C603
C606
C607
C609
C605
R602
R601
R618
R617
R614
R624
R623
FL601
IC601
X601
C601
C602
R603
R604
R608
R607
R606
R605
D609
D610
D614
D615
D613
D612
D605
IT MODEL
R615
R612
R613
R609
R610
R616
R619
R620
R621
R622
R611
CN602
RED
S605
5
S606
6
S607
7
S608
8
S601
1
S602
2
S603
3
S604
4
S615
−
S614
+
11
TO TUNER BOARD
A


C
TO TUNER BOARD
[CONNECTOR BOARD]
CN902
CN901
11
CN901
1 L CH
2 GND
3 R CH
SYSTEM CONTROL 1


D
E
F
G
H
I
J
AEP, WG, IT MODEL
CNP801
AC IN
CNJ801
CNJ802
SWITCHED 500W MAX AC OUTLET
BRN
BLU
CNP801
AC IN
L
N
SWITCHED 500W MAX AC OUTLET
UK MODEL
[POWER BOARD]
CN803
PT801
C803
D803
D802
C802
C810
D804
D805
R807
D701
C804
C811
D809
R808
C809
D806
Q803
IC801
[IC BOARD]
CN802
RED
TO TUNER BOARD
B
C808
C812
C813
C807
R802
R809
CN804
AEP MODEL
UK MODEL
F801
R801
R803
Q801
C702
C703
C701
Q703
RY801
D801
C806
C805
X701
L701
R707
R708
R709
C704
C705
D702
CN801
BLU
BRN
C801
R804
IC701
R710
R705
R704
Q702
R702
R806
Q802
Q701
R703
CN701
R706
R805
R701
11
1 AUB
2 GND
3
SYSTEM CONTROL 2

• Semiconductor Location

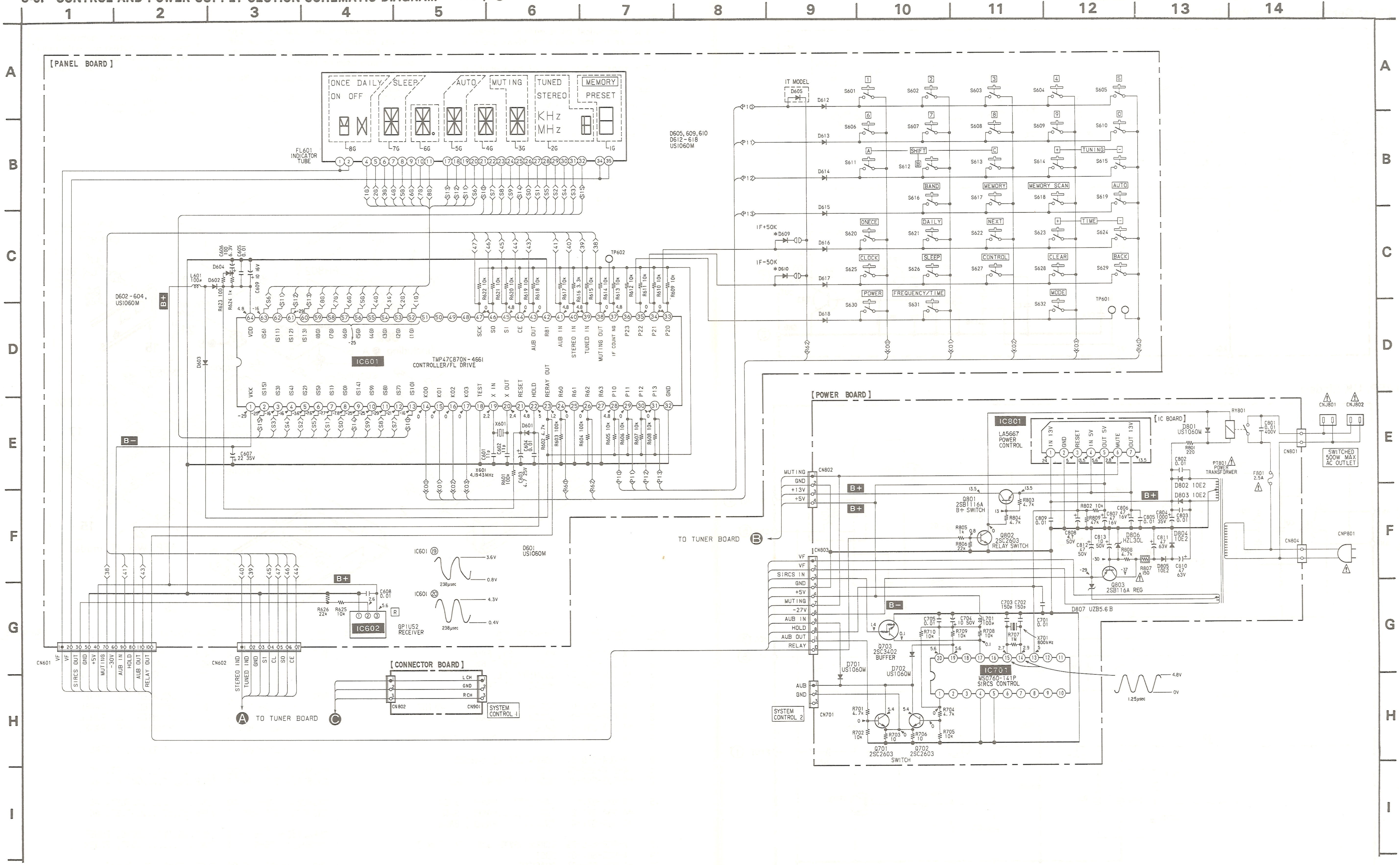
Ref. No.	Location
D601	B-5
D602	C-4
D603	B-4
D604	C-5
D605	B-9
D609	B-8
D610	B-8
D612	B-9
D613	A-9
D614	A-9
D615	A-9
D616	C-4
D617	C-4
D618	C-3
D701	E-12
D702	H-12
D801	H-10
D802	E-9
D803	E-9
D804	E-11
D805	E-11
D806	F-11
D809	F-11
IC601	B-7
IC602	B-1
IC701	H-11
IC801	F-10
Q701	I-10
Q702	H-12
Q703	G-12
Q801	G-10
Q802	I-10
Q803	F-11

Note:

- ○—— : parts extracted from the component side.
- ■ : parts mounted on the conductor side.
- [ ]← indicates side identified with part number.
- WG: West Germany model
- IT: Italian model

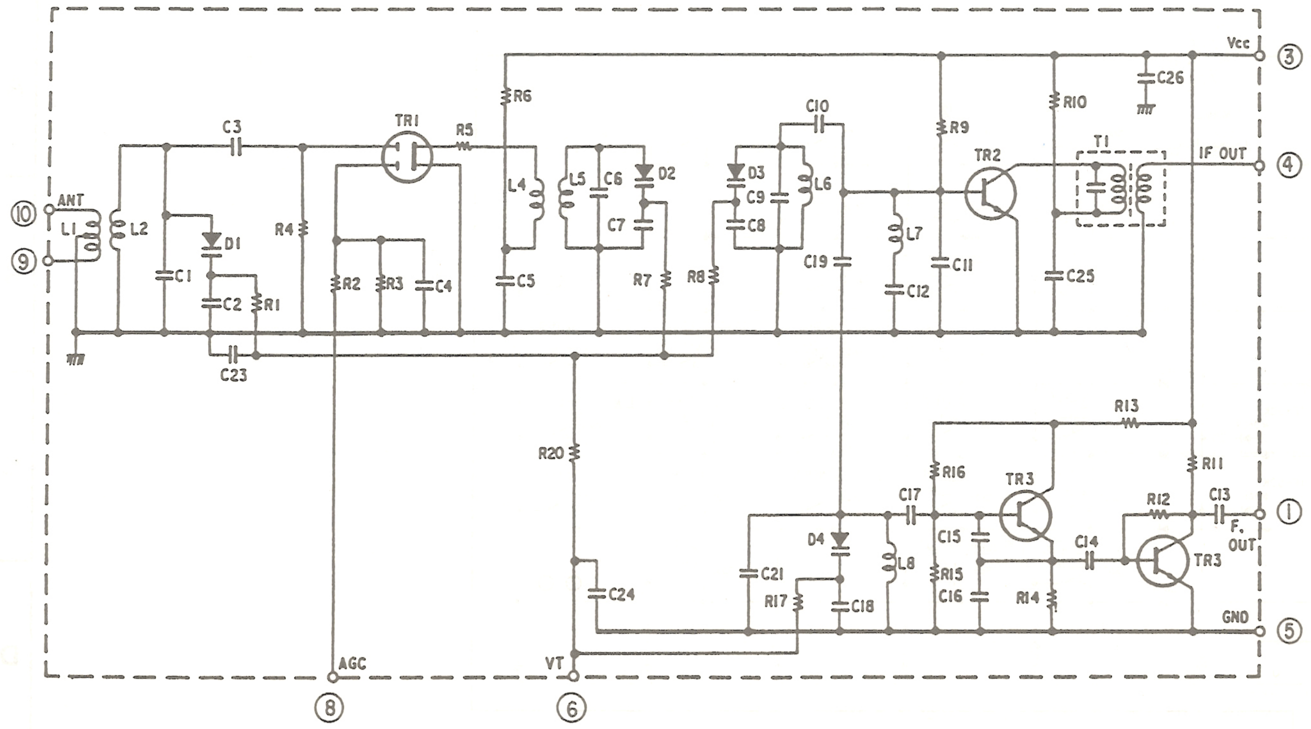
3-6. CONTROL AND POWER SUPPLY SECTION SCHEMATIC DIAGRAM

• See page 6 for Notes.

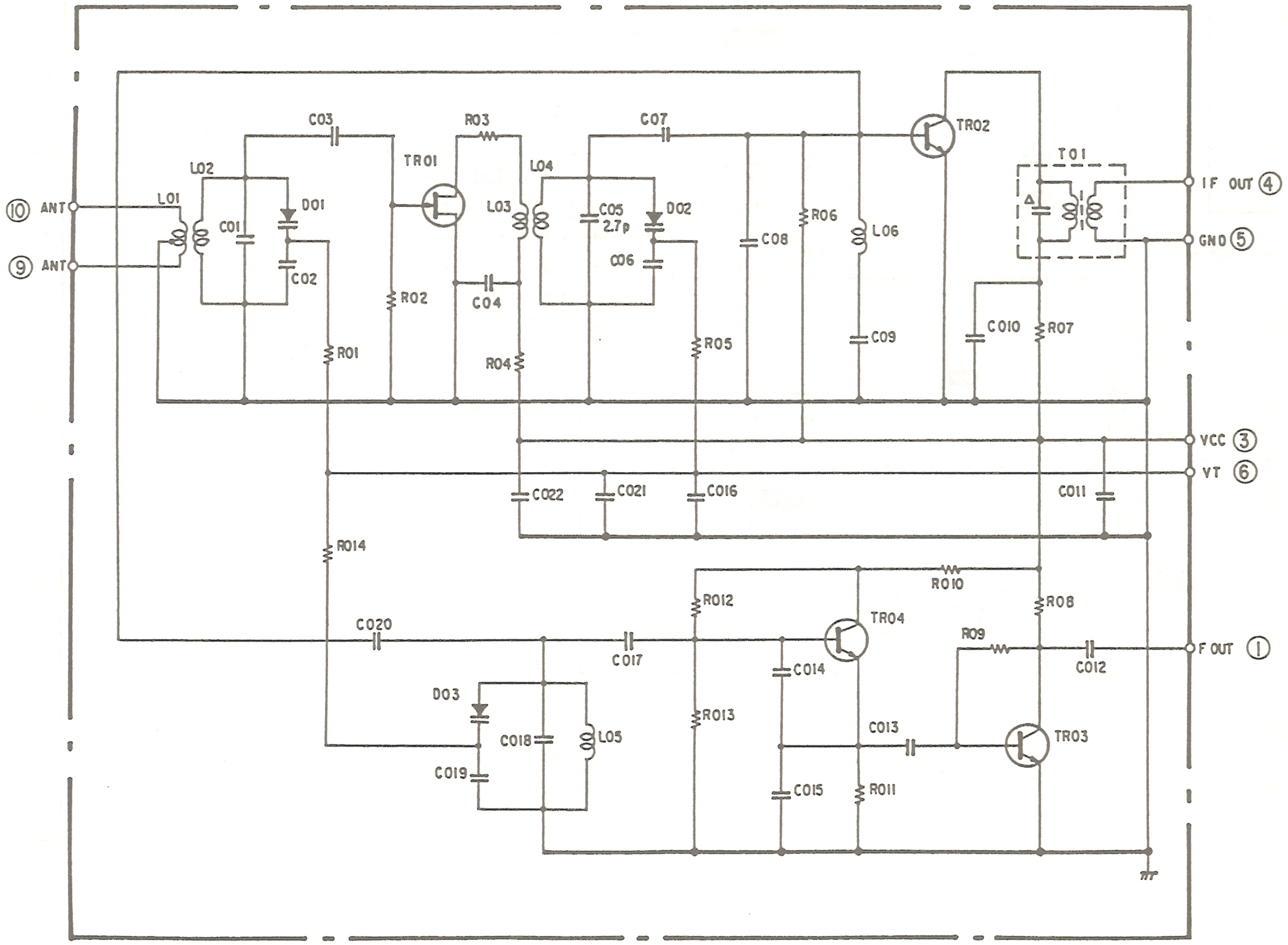

1
2
3
4
5
6
7
8
9
10
11
12
13
14
A
B
C
D
E
F
G
H
I
[PANEL BOARD]
ONCE DAILY
ON OFF
SLEEP
AUTO
MUTING
TUNED
STEREO
MEMORY
PRESET
KHz
MHz
FL601
INDICATOR TUBE
IT MODEL
D605
D605, 609, 610
D612-618
US1060M
S601
S602
S603
S604
S605
S606
S607
S608
S609
S610
S611
S612
S613
S614
S615
S616
S617
S618
S619
S620
S621
S622
S623
S624
S625
S626
S627
S628
S629
S630
S631
S632
SHIFT
TUNING
BAND
MEMORY
MEMORY SCAN
AUTO
ONCE
DAILY
NEXT
TIME
CLOCK
SLEEP
CONTROL
CLEAR
BACK
POWER
FREQUENCY/TIME
MODE
IF+50K
IF-50K
TP601
TP602
D602-604,
US1060M
B+
B−
IC601
TMP47C870N-4661
CONTROLLER/FL DRIVE
X601
4.1943MHz
C607
22 35V
IC601 ⑲
IC601 ⑳
3.6V
0.8V
238μsec
4.3V
0.4V
D601
US1060M
IC602
GP1U52
RECEIVER
R626
22k
R625
10k
C608
0.01
CN601
VF
VF
SIRCS OUT
GND
+5V
MUTING
−30V
AUB IN
HOLD
AUB OUT
RELAY OUT
CN602
STEREO IND
TUNED IND
GND
SI
CL
SO
CE
TO TUNER BOARD
[CONNECTOR BOARD]
L CH
GND
R CH
CN802
CN901
SYSTEM CONTROL 1
TO TUNER BOARD
[POWER BOARD]
CN802
MUTING
GND
+13V
+5V
CN803
VF
VF
SIRCS IN
GND
+5V
MUTING
−27V
AUB IN
HOLD
AUB OUT
RELAY
AUB
GND
CN701
SYSTEM CONTROL 2
IC801
LA5667
POWER CONTROL
IN 13V
GND
RESET
IN 5V
OUT 5V
MUTE
OUT 13V
[IC BOARD]
RY801
D801
US1060M
R801
220
C801
0.01
400V
CN801
CNJ801
CNJ802
SWITCHED
500W MAX
AC OUTLET
PT801
POWER TRANSFORMER
F801
2.5A
CN804
CNP801
D802 10E2
D803 10E2
D804 10E2
D805 10E2
D806
HZL30L
Q801
2SB1116A
B+ SWITCH
Q802
2SC2603
RELAY SWITCH
Q803
2SB1116A REG
D807 UZB5.6B
IC701
M50760-141P
SIRCS CONTROL
X701
800kHz
Q703
2SC3402
BUFFER
D701
US1060M
D702
US1060M
Q701
2SC2603
Q702
2SC2603
SWITCH
4.8V
0V
1.25μsec

3-7. FM FRONT-END (FE1) SCHEMATIC DIAGRAMS

(West Germany, Italian Model)


Vcc
③
IF OUT
④
F. OUT
①
GND
⑤
AGC
⑧
VT
⑥
ANT
⑩
⑨
L1
L2
C1
C2
D1
R1
C23
C3
R4
TR1
R5
R2
R3
C4
R6
L4
C5
L5
C6
D2
C7
R7
R8
C10
D3
C9
C8
L6
C19
R9
L7
C12
C11
TR2
R10
C26
T1
C25
R20
C24
R13
R11
R16
TR3
C17
D4
C21
R17
C18
L8
C15
R15
C16
R14
C14
R12
C13
TR3

(AEP, UK Model)


⑩ ANT
⑨ ANT
L01
L02
C01
D01
C02
C03
TR01
R03
R02
R01
C04
R04
L03
L04
C05
2.7p
C06
D02
C07
C08
R06
R05
L06
C09
TR02
T01
C010
R07
IF OUT ④
GND ⑤
VCC ③
VT ⑥
C022
C021
C016
C011
R014
C020
C017
R012
TR04
R010
R08
R09
C012
F OUT ①
C014
D03
C018
L05
C019
R013
C013
C015
R011
TR03

SECTION 4
EXPLODED VIEW

NOTE:

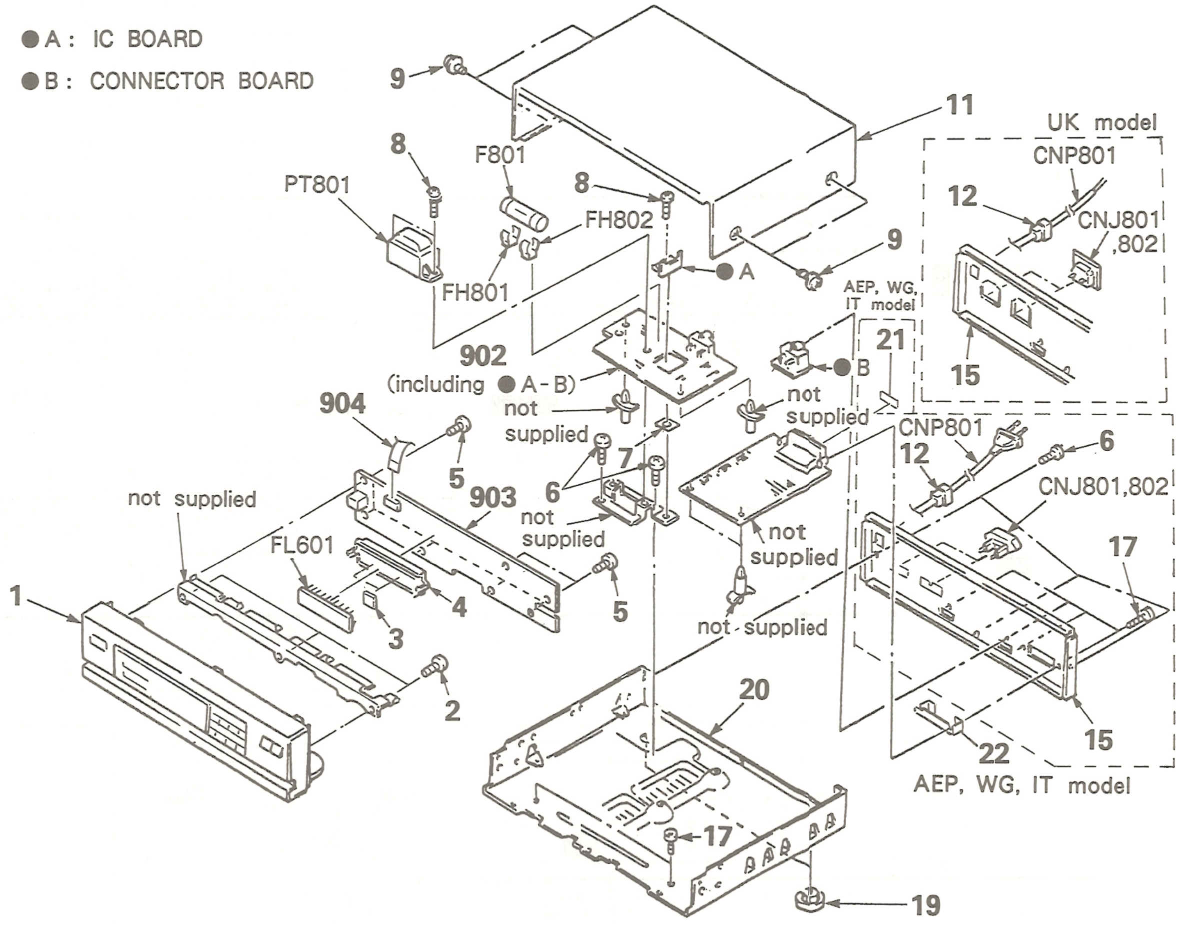
- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- Color Indication of Appearance Parts Example:
  (RED) ... KNOB, BALANCE (WHITE)
  ↑ Cabinet's Color ↑ Parts Color

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

- WG: West Germany model
- IT : Italian model

●A : IC BOARD

●B : CONNECTOR BOARD


9
8
F801
8
FH802
PT801
FH801
●A
9
11
UK model
CNP801
12
CNJ801
,802
AEP, WG, IT model
21
●B
15
902
(including ●A-B)
not supplied
904
7
not supplied
5
6
903
not supplied
not supplied
FL601
1
4
3
5
not supplied
CNP801
12
6
CNJ801,802
17
2
20
22
15
AEP, WG, IT model
17
19

No.	Part No.	Description	Remarks
1	X-4917-289-1	PANEL ASSY, FRONT	
2	7-685-134-19	SCREW +BTP 2.6X8 TYPE2 N-S	
3	*4-921-941-31	CUSHION (FL)	
4	*4-923-103-01	HOLDER, FL TUBE	
5	4-928-635-01	SCREW, +BV (2.6X8) TAPPING	
6	7-682-547-09	SCREW +BVTT 3X6 (S)	
7	*4-937-354-01	SHEET	
8	3-703-249-31	SCREW, S TIGHT, +PTTWH (M3X10)	
9	3-704-366-01	SCREW (CASE) (M3X8)	
11	4-919-389-31	CASE	
12	*3-703-244-00	BUSHING (2104), CORD	
15	*4-934-871-11	(AEP,IT)...PANEL, BACK	
	*4-934-871-21	(UK).......PANEL, BACK	
	*4-934-871-41	(WG).......PANEL, BACK	
17	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
19	4-933-601-01	FOOT	
20	*4-924-520-01	CHASSIS	
21	*4-612-009-01	(WG,IT)...SPACER (A)	
22	*4-924-988-11	PLATE (ST), GROUND	
902	*A-4334-501-A	(AEP).....MOUNTED PCB, POWER	
	*A-4334-503-A	(WG,IT)...MOUNTED PCB, POWER	
	*A-4334-822-A	(UK)......MOUNTED PCB, POWER	
903	*A-4334-497-A	(AEP)...MOUNTED PCB, PANEL	
	*A-4334-499-A	(WG)....MOUNTED PCB, PANEL	
	*A-4334-500-A	(IT)....MOUNTED PCB, PANEL	
	*A-4334-821-A	(UK)....MOUNTED PCB, PANEL	
904	1-575-666-11	WIRE, FLAT TYPE (11 CORE)	
CNJ801⚠	1-526-751-00	(UK).........OUTLET, AC	
CNJ801⚠	1-526-794-11	(AEP,WG,IT)...OUTLET, AC	
CNJ802⚠	1-526-751-00	(UK).........OUTLET, AC	
CNJ802⚠	1-526-794-11	(AEP,WG,IT)...OUTLET, AC	
CNP801⚠	1-575-651-11	(AEP,WG,IT)...CORD, POWER	
CNP801⚠	1-575-652-11	(UK).........CORD, POWER	
F801 ⚠.	1-532-286-00	FUSE, TIME-LAG (2.5A)	
FH801	1-533-213-31	HOLDER, FUSE	
FH802	1-533-213-31	HOLDER, FUSE	
FL601	1-519-595-11	INDICATOR TUBE, FLUORESCENT	
PT801⚠.	1-449-979-11	TRANSFORMER, POWER	

SECTION 5
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF: μF, PF: μμF.

RESISTORS
- All resistors are in ohms.
- F: nonflammable

COILS
- MMH: mH, UH: μH

SEMICONDUCTORS
In each case, U: μ, for example:
UA...: μA..., UPA...: μPA...,
UPC...: μPC, UPD...: μPD...

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

- WG: West Germany model
- IT : Italian model

TUNER SECTION

Ref.No.	Part No.	Description
C1	1-162-294-31	CERAMIC CHIP 0.001MF 20% 25V
C2	1-126-101-11	ELECT 100MF 20% 16V
C3	1-163-059-00	CERAMIC MELF 0.01MF 20% 16V
C4	1-162-294-31	CERAMIC CHIP 0.001MF 20% 25V
C5	1-163-059-00	CERAMIC MELF 0.01MF 20% 16V
C6	1-163-059-00	CERAMIC MELF 0.01MF 20% 16V
C7	1-163-059-00	(WG,IT)...CERAMIC MELF 0.01MF 20% 16V
C8	1-163-059-00	(WG,IT)...CERAMIC MELF 0.01MF 20% 16V
C9	1-163-059-00	CERAMIC MELF 0.01MF 20% 16V
C11	1-101-005-00	(WG,IT)...CERAMIC 0.022MF 50V
C21	1-101-006-00	CERAMIC 0.047MF 50V
C22	1-163-059-00	CERAMIC MELF 0.01MF 20% 16V
C23	1-124-477-11	ELECT 47MF 20% 16V
C24	1-123-382-00	ELECT 3.3MF 20% 50V
C25	1-163-063-00	CERAMIC MELF 0.022MF 25V
C26	1-163-019-00	CERAMIC CHIP 0.0068 20% 12V
C27	1-162-516-11	(AEP,UK)..CERAMIC CHIP 100PF 10% 50V
C27	1-163-007-11	(WG,IT)...CERAMIC CHIP 680PF 20% 50V
C28	1-124-791-11	ELECT 1.0MF 20% 50V
C29	1-162-516-11	(WG,IT)...CERAMIC CHIP 100PF 10% 50V
C30	1-124-791-11	ELECT 1.0MF 20% 50V
C31	1-124-902-00	ELECT 0.47MF 20% 50V
C32	1-124-463-00	ELECT 0.1MF 20% 50V
C33	1-130-481-00	FILM 0.0068MF 5% 50V
C34	1-123-382-00	ELECT 3.3MF 20% 50V
C35	1-130-481-00	FILM 0.0068MF 5% 50V
C36	1-123-382-00	ELECT 3.3MF 20% 50V
C37	1-123-875-11	ELECT 10MF 20% 50V
C39	1-163-059-00	CERAMIC MELF 0.01MF 20% 16V
C40	1-124-463-00	ELECT 0.1MF 20% 50V
C41	1-124-927-11	ELECT 4.7MF 20% 50V
C42	1-163-059-00	CERAMIC MELF 0.01MF 20% 16V
C43	1-126-176-11	ELECT 220MF 20% 10V
C44	1-163-059-00	CERAMIC MELF 0.01MF 20% 16V
C45	1-123-382-00	ELECT 3.3MF 20% 50V
C46	1-161-375-00	CERAMIC CHIP 0.0022MF 20% 25V
C47	1-163-170-00	(WG,IT)...CERAMIC CHIP 0.0047MF 20% 25V
C48	1-123-382-00	ELECT 3.3MF 20% 50V
C49	1-161-375-00	CERAMIC CHIP 0.0022MF 20% 25V
C50	1-163-170-00	(WG,IT)...CERAMIC CHIP 0.0047MF 20% 25V
C51	1-124-477-11	ELECT 47MF 20% 16V
C53	1-163-105-00	CERAMIC CHIP 33PF 5% 50V
C54	1-101-005-00	(WG,IT)...CERAMIC 0.022MF 50V
C61	1-163-063-00	CERAMIC MELF 0.022MF 25V
C62	1-163-063-00	CERAMIC MELF 0.022MF 25V
C63	1-163-063-00	CERAMIC MELF 0.022MF 25V
C64	1-163-063-00	CERAMIC MELF 0.022MF 25V
C65	1-163-063-00	CERAMIC MELF 0.022MF 25V
C66	1-163-063-00	CERAMIC MELF 0.022MF 25V

Ref.No.	Part No.	Description
C67	1-102-120-00	CERAMIC 0.0018MF 10% 50V
C68	1-163-111-11	CERAMIC CHIP 0.0015MF 20% 25V
C69	1-163-063-00	CERAMIC MELF 0.022MF 25V
C70	1-163-063-00	CERAMIC MELF 0.022MF 25V
C71	1-163-063-00	CERAMIC MELF 0.022MF 25V
C72	1-163-063-00	CERAMIC MELF 0.022MF 25V
C73	1-163-063-00	CERAMIC MELF 0.022MF 25V
C81	1-102-961-00	CERAMIC 27PF 5% 50V
C82	1-102-961-00	CERAMIC 27PF 5% 50V
C83	1-163-059-00	CERAMIC MELF 0.01MF 20% 16V
C84	1-163-059-00	CERAMIC MELF 0.01MF 20% 16V
C85	1-163-059-00	CERAMIC MELF 0.01MF 20% 16V
C86	1-124-477-11	ELECT 47MF 20% 16V
C87	1-163-059-00	CERAMIC MELF 0.01MF 20% 16V
C88	1-163-059-00	CERAMIC MELF 0.01MF 20% 16V
C101	1-124-925-11	ELECT 2.2MF 20% 50V
C102	1-124-463-00	ELECT 0.1MF 20% 50V
C103	1-163-059-00	CERAMIC MELF 0.01MF 20% 16V
C104	1-163-059-00	CERAMIC MELF 0.01MF 20% 16V
C105	1-124-477-11	ELECT 47MF 20% 16V
C106	1-136-173-00	MYLAR 0.47MF 5% 50V
C107	1-124-463-00	ELECT 0.1MF 20% 50V
C108	1-163-063-00	(WG,IT)...CERAMIC MELF 0.022MF 25V
CF1	1-567-389-11	FILTER, CERAMIC
CF2	1-567-389-11	FILTER, CERAMIC
CF3	1-567-389-11	(WG,IT)....FILTER, CERAMIC
CF21	1-577-075-11	OSCILLATOR, CERAMIC (19kHz)
CFT21	1-404-853-11	TRANSFORMER, IF (CERAMIC FILTER)
CNJ1	*1-568-273-11	SOCKET, CONNECTOR 7P
CNJ3	*1-568-308-11	SOCKET, CONNECTOR 4P
CNJ4	1-568-269-11	SOCKET, CONNECTOR 3P
D61	8-719-912-20	DIODE 1SS120
FE1	1-463-857-11	(WG,IT)....FRONT END (FM)
FE1	1-463-862-21	(AEP,UK)...FRONT END (FM)
FE61	1-236-462-11	ENCAPSULATED COMPONENT (MW RF BLOCK)
FE62	1-236-463-11	ENCAPSULATED COMPONENT (LW RF BLOCK)
IC21	8-759-821-45	IC LA1851N
IC81	8-759-820-91	IC LC7218
L1	1-410-645-31	MICRO INDUCTOR 100UH
L2	1-410-645-31	(WG,IT)...MICRO INDUCTOR 100UH
L21	1-407-500-00	MICRO INDUCTOR 4.7UH
L61	1-410-525-11	MICRO INDUCTOR 220UH
LPF21	1-235-164-00	FILTER, LOW PASS
LPF22	1-235-164-00	FILTER, LOW PASS

TUNER SECTION

Ref.No.	Part No.	Description
Q1	8-729-230-99	TRANSISTOR 2SC2669-OY
Q2	8-729-230-99	TRANSISTOR 2SC2669-OY
Q3	8-729-230-99	(WG,IT)...TRANSISTOR 2SC2669-OY
Q4	8-729-230-99	(WG,IT)...TRANSISTOR 2SC2669-OY
Q21	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q22	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q23	8-729-900-61	TRANSISTOR DTA114ES
Q24	8-729-900-80	TRANSISTOR DTC114ES
Q26	8-729-900-80	TRANSISTOR DTC114ES
Q61	8-729-900-80	TRANSISTOR DTC114ES
Q62	8-729-900-80	TRANSISTOR DTC114ES
Q63	8-729-900-80	TRANSISTOR DTC114ES
Q64	8-729-820-24	TRANSISTOR 2SC3330-T
Q65	8-729-821-04	TRANSISTOR 2SA1317-STU
Q66	8-729-900-80	TRANSISTOR DTC114ES
Q81	8-729-900-61	TRANSISTOR DTA114ES
Q82	8-729-900-80	TRANSISTOR DTC114ES
Q83	8-729-202-67	TRANSISTOR 2SK246-GR3
Q84	8-729-107-84	TRANSISTOR 2SC3113A
Q85	8-729-202-67	TRANSISTOR 2SK246-GR3
Q86	8-729-107-84	TRANSISTOR 2SC3113A
R1	⚠.1-249-397-11	(WG,IT)....CARBON (SMALL)22 5% 1/4W F
R1	⚠.1-249-401-11	(AEP,UK)...CARBON (SMALL)47 5% 1/4W F
R3	1-249-329-11	CARBON MELF 330 5% 1/8W
R4	1-249-329-11	CARBON MELF 330 5% 1/8W
R5	1-249-329-11	CARBON MELF 330 5% 1/8W
R6	1-249-350-11	CARBON MELF 18K 5% 1/8W
R7	1-249-329-11	CARBON MELF 330 5% 1/8W
R8	1-249-332-11	CARBON MELF 560 5% 1/8W
R9	1-249-352-11	CARBON MELF 27K 5% 1/8W
R10	1-249-329-11	(WG,IT)...CARBON MELF 330 5% 1/8W
R11	1-249-350-11	(WG,IT)...CARBON MELF 18K 5% 1/8W
R12	1-249-329-11	(WG,IT)...CARBON MELF 330 5% 1/8W
R13	1-249-334-11	(WG,IT)...CARBON MELF 820 5% 1/8W
R14	1-249-352-11	(WG,IT)...CARBON MELF 27K 5% 1/8W
R15	1-249-347-11	(WG,IT)...CARBON MELF 10K 5% 1/8W
R16	1-249-343-11	(WG,IT)...CARBON MELF 4.7K 5% 1/8W
R21	⚠.1-249-404-00	CARBON (SMALL)82 5% 1/4W F
R22	⚠.1-249-430-11	CARBON (SMALL)12K 5% 1/4W F
R23	1-249-335-11	CARBON MELF 1K 5% 1/8W
R24	1-249-353-11	CARBON MELF 33K 5% 1/8W
R25	1-249-346-11	CARBON MELF 8.2K 5% 1/8W
R26	1-249-340-11	(WG,IT)...CARBON MELF 2.7K 5% 1/8W
R27	⚠.1-249-432-11	CARBON (SMALL)18K 5% 1/4W F
R29	1-249-347-11	CARBON MELF 10K 5% 1/8W
R31	1-249-331-11	CARBON MELF 470 5% 1/8W
R32	1-249-347-11	CARBON MELF 10K 5% 1/8W
R33	1-249-347-11	CARBON MELF 10K 5% 1/8W
R34	⚠.1-249-437-11	CARBON (SMALL)47K 5% 1/4W F
R35	1-249-355-11	CARBON MELF 47K 5% 1/8W
R37	1-249-359-11	CARBON MELF 100K 5% 1/8W
R38	1-249-363-11	CARBON MELF 220K 5% 1/8W
R39	1-249-339-11	CARBON MELF 2.2K 5% 1/8W
R40	1-249-338-11	CARBON MELF 1.8K 5% 1/8W
R41	1-249-344-11	CARBON MELF 5.6K 5% 1/8W
R42	1-249-359-11	CARBON MELF 100K 5% 1/8W
R43	1-249-363-11	CARBON MELF 220K 5% 1/8W
R44	1-249-339-11	CARBON MELF 2.2K 5% 1/8W
R45	1-249-338-11	CARBON MELF 1.8K 5% 1/8W
R46	1-249-344-11	CARBON MELF 5.6K 5% 1/8W
R47	⚠.1-249-409-11	CARBON (SMALL)220 5% 1/4W F
R61	1-249-359-11	CARBON MELF 100K 5% 1/8W
R62	1-249-355-11	CARBON MELF 47K 5% 1/8W
R64	1-249-351-11	CARBON MELF 22K 5% 1/8W
R65	1-249-355-11	CARBON MELF 47K 5% 1/8W
R66	1-215-493-00	CARBON MELF 1M 5% 1/5W
R67	1-249-359-11	CARBON MELF 100K 5% 1/8W
R68	1-249-352-11	CARBON MELF 27K 5% 1/8W
R69	1-249-351-11	CARBON MELF 22K 5% 1/8W
R70	1-249-331-11	CARBON MELF 470 5% 1/8W
R71	1-249-339-11	CARBON MELF 2.2K 5% 1/8W
R72	1-249-351-11	CARBON MELF 22K 5% 1/8W
R73	1-249-347-11	CARBON MELF 10K 5% 1/8W
R74	1-249-347-11	CARBON MELF 10K 5% 1/8W
R75	1-249-343-11	CARBON MELF 4.7K 5% 1/8W
R81	1-249-335-11	CARBON MELF 1K 5% 1/8W
R82	1-249-335-11	CARBON MELF 1K 5% 1/8W
R83	1-249-335-11	CARBON MELF 1K 5% 1/8W
R84	1-249-335-11	CARBON MELF 1K 5% 1/8W
R85	1-249-347-11	CARBON MELF 10K 5% 1/8W
R86	1-249-335-11	CARBON MELF 1K 5% 1/8W
R87	1-249-347-11	CARBON MELF 10K 5% 1/8W
R88	1-249-343-11	CARBON MELF 4.7K 5% 1/8W
R89	1-249-335-11	CARBON MELF 1K 5% 1/8W
R90	1-249-343-11	CARBON MELF 4.7K 5% 1/8W
R91	1-249-335-11	CARBON MELF 1K 5% 1/8W
R92	⚠.1-249-401-11	CARBON (SMALL)47 5% 1/4W F
R101	1-249-341-11	CARBON MELF 3.3K 5% 1/8W
R102	1-249-332-11	CARBON MELF 560 5% 1/8W
R103	1-249-335-11	CARBON MELF 1K 5% 1/8W
R104	1-249-328-11	CARBON MELF 270 5% 1/8W
R105	1-249-343-11	CARBON MELF 4.7K 5% 1/8W
R106	1-249-339-11	CARBON MELF 2.2K 5% 1/8W
R107	1-249-343-11	CARBON MELF 4.7K 5% 1/8W
R108	1-249-323-11	CARBON MELF 100 5% 1/8W
R109	1-249-343-11	CARBON MELF 4.7K 5% 1/8W
R110	⚠.1-249-405-11	CARBON (SMALL)100 5% 1/4W F
R111	1-249-341-11	CARBON MELF 3.3K 5% 1/8W
R112	1-249-332-11	CARBON MELF 560 5% 1/8W
R113	1-249-335-11	CARBON MELF 1K 5% 1/8W
R114	1-249-328-11	CARBON MELF 270 5% 1/8W
R115	1-249-351-11	CARBON MELF 22K 5% 1/8W
R116	1-249-339-11	CARBON MELF 2.2K 5% 1/8W
R117	1-249-343-11	CARBON MELF 4.7K 5% 1/8W
R118	1-249-323-11	CARBON MELF 100 5% 1/8W
RV21	1-238-013-11	(AEP,UK)...RES, ADJ, CARBON 2.2K
RV21	1-238-015-11	(WG,IT)....RES, ADJ, CARBON 4.7K
RV22	1-238-017-11	RES, ADJ, CARBON 22K
RV24	1-238-017-11	(AEP,UK)...RES, ADJ, CARBON 22K
RV24	1-238-019-11	(WG,IT)....RES, ADJ, CARBON 47K
T21	1-404-807-11	TRANSFORMER, DISCRIMINATOR
T23	1-236-465-11	(WG,IT)...ENCAPSULATED COMPONENT
TM1	*1-537-138-31	TERMINAL BOARD (ANT)(ANTENNA)
TP1	*1-560-060-00	PIN, CONNECTOR 2P
XT81	1-577-126-11	VIBRATOR, CRYSTAL (7.2MHz)

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

EXCEPT TUNER SECTION

Ref.No.	Part No.	Description			
902	*A-4334-501-A	(AEP).....MOUNTED PCB, POWER			
	*A-4334-503-A	(WG,IT)...MOUNTED PCB, POWER			
	*A-4334-822-A	(UK)......MOUNTED PCB, POWER			
903	*A-4334-497-A	(AEP)...MOUNTED PCB, PANEL			
	*A-4334-499-A	(WG)....MOUNTED PCB, PANEL			
	*A-4334-500-A	(IT)....MOUNTED PCB, PANEL			
	*A-4334-821-A	(UK)....MOUNTED PCB, PANEL			
904	1-575-666-11	WIRE, FLAT TYPE (11 CORE)			
C601	1-162-200-31	CERAMIC	11PF	5%	50V
C602	1-162-200-31	CERAMIC	11PF	5%	50V
C603	1-126-094-11	ELECT	4.7MF	20%	25V
C604	1-161-379-00	CERAMIC	0.01MF	30%	16V
C605	1-161-379-00	CERAMIC	0.01MF	30%	16V
C606	1-126-177-11	ELECT	100MF	20%	6.3V
C607	1-123-357-00	ELECT	22MF	20%	35V
C608	1-161-379-00	CERAMIC	0.01MF	30%	16V
C609	1-126-157-11	ELECT	10MF	20%	16V
C701	1-161-379-00	CERAMIC	0.01MF	30%	16V
C702	1-162-284-31	CERAMIC	150PF	10%	50V
C703	1-162-284-31	CERAMIC	150PF	10%	50V
C704	1-123-875-11	ELECT	10MF	20%	50V
C705	1-161-379-00	CERAMIC	0.01MF	30%	16V
C801	1-161-744-00	CERAMIC	0.01MF		400V
C802	1-101-004-00	CERAMIC	0.01MF		50V
C803	1-101-004-00	CERAMIC	0.01MF		50V
C804	1-126-105-11	ELECT	1000MF	20%	35V
C805	1-161-379-00	CERAMIC	0.01MF	30%	16V
C806	1-124-477-11	ELECT	47MF	20%	16V
C807	1-124-477-11	ELECT	47MF	20%	16V
C808	1-124-927-11	ELECT	4.7MF	20%	50V
C809	1-161-379-00	CERAMIC	0.01MF	30%	16V
C810	1-124-918-11	ELECT	47MF	20%	63V
C811	1-124-918-11	ELECT	47MF	20%	63V
C812	1-124-910-11	ELECT	47MF	20%	50V
C813	1-123-875-11	ELECT	10MF	20%	50V
CN601	*1-568-854-11	SOCKET, CONNECTOR 11P			
CN602	*1-568-273-11	SOCKET, CONNECTOR 7P			
CN701	*1-569-625-11	SOCKET, CONNECTOR 3P(SYSTEM CONTROL 2)			
CN801	1-535-139-00	BASE POST 22MM (10MM PITCH) 2P			
CN802	*1-568-308-11	SOCKET, CONNECTOR 4P			
CN803	*1-568-830-11	SOCKET, CONNECTOR 11P			
CN804	*1-564-321-00	PIN, CONNECTOR 2P			
CN901	*1-569-625-11	SOCKET, CONNECTOR 3P(SYSTEM CONTROL 1)			
CN902	1-568-269-11	SOCKET, CONNECTOR 3P			

Ref.No.	Part No.	Description
CNJ801	⚠1-526-751-00	(UK)..........OUTLET, AC
CNJ801	⚠1-526-794-11	(AEP,WG,IT)...OUTLET, AC
CNJ802	⚠1-526-751-00	(UK)..........OUTLET, AC
CNJ802	⚠1-526-794-11	(AEP,WG,IT)...OUTLET, AC
CNP801	⚠1-575-651-11	(AEP,WG,IT)...CORD, POWER
CNP801	⚠1-575-652-11	(UK)..........CORD, POWER
D601	8-719-912-20	DIODE 1SS120
D602	8-719-912-20	DIODE 1SS120
D603	8-719-912-20	DIODE 1SS120
D604	8-719-912-20	DIODE 1SS120
D605	8-719-912-20	(IT)...DIODE 1SS120
D609	8-719-912-20	DIODE 1SS120
D612	8-719-912-20	DIODE 1SS120
D613	8-719-912-20	DIODE 1SS120
D614	8-719-912-20	DIODE 1SS120
D615	8-719-912-20	DIODE 1SS120
D616	8-719-912-20	DIODE 1SS120
D617	8-719-912-20	DIODE 1SS120
D618	8-719-912-20	DIODE 1SS120
D701	8-719-912-20	DIODE 1SS120
D702	8-719-912-20	DIODE 1SS120
D801	8-719-912-20	DIODE 1SS120
D802	8-719-200-77	DIODE 10E2N
D803	8-719-200-77	DIODE 10E2N
D804	8-719-200-77	DIODE 10E2N
D805	8-719-200-77	DIODE 10E2N
D806	8-719-934-22	DIODE HZS30-2L
D807	8-719-014-66	DIODE UZP-5.6B
F801	⚠.1-532-286-00	FUSE, TIME-LAG (2.5A)
FH801	1-533-213-31	HOLDER, FUSE
FH802	1-533-213-31	HOLDER, FUSE
FL601	1-519-595-11	INDICATOR TUBE, FLUORESCENT
IC601	8-759-239-54	IC TMP47C870N-4661
IC602	8-749-920-83	IC GP1U52XB
IC701	8-759-634-73	IC M50760-141P
IC801	8-759-820-09	IC LA5667
L601	1-410-521-11	INDUCTOR 100UH
L701	1-410-521-11	INDUCTOR 100UH
PT801	⚠.1-449-979-11	TRANSFORMER, POWER
Q701	8-729-620-05	TRANSISTOR 2SC2603-EF
Q702	8-729-620-05	TRANSISTOR 2SC2603-EF
Q703	8-729-900-80	TRANSISTOR DTC114ES

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

EXCEPT TUNER SECTION

Ref.No.	Part No.	Description			
Q801	8-729-140-04	TRANSISTOR 2SB1116A-L			
Q802	8-729-620-05	TRANSISTOR 2SC2603-EF			
Q803	8-729-140-04	TRANSISTOR 2SB1116A-L			
R601	1-249-441-11	CARBON	100K	5%	1/4W
R602	1-249-425-11	CARBON	4.7K	5%	1/4W
R603	1-249-441-11	CARBON	100K	5%	1/4W
R604	1-249-441-11	CARBON	100K	5%	1/4W
R605	1-249-429-11	CARBON	10K	5%	1/4W
R606	1-249-429-11	CARBON	10K	5%	1/4W
R607	1-249-429-11	CARBON	10K	5%	1/4W
R608	1-249-429-11	CARBON	10K	5%	1/4W
R609	1-249-429-11	CARBON	10K	5%	1/4W
R610	1-249-429-11	CARBON	10K	5%	1/4W
R611	1-249-429-11	CARBON	10K	5%	1/4W
R612	1-249-429-11	CARBON	10K	5%	1/4W
R613	1-249-429-11	CARBON	10K	5%	1/4W
R614	1-249-429-11	CARBON	10K	5%	1/4W
R615	1-249-429-11	CARBON	10K	5%	1/4W
R616	1-249-423-11	CARBON	3.3K	5%	1/4W
R617	1-249-429-11	CARBON	10K	5%	1/4W
R618	1-249-429-11	CARBON	10K	5%	1/4W
R619	1-249-429-11	CARBON	10K	5%	1/4W
R620	1-249-429-11	CARBON	10K	5%	1/4W
R621	1-249-429-11	CARBON	10K	5%	1/4W
R622	1-249-429-11	CARBON	10K	5%	1/4W
R623	1-249-405-11	CARBON	100	5%	1/4W
R624	1-249-417-11	CARBON	1K	5%	1/4W
R625	1-249-429-11	CARBON	10K	5%	1/4W
R626	1-249-433-11	CARBON	22K	5%	1/4W
R701	1-249-425-11	CARBON	4.7K	5%	1/4W
R702	1-249-429-11	CARBON	10K	5%	1/4W
R703	1-249-393-11	CARBON	10	5%	1/4W
R704	1-249-425-11	CARBON	4.7K	5%	1/4W
R705	1-249-429-11	CARBON	10K	5%	1/4W
R706	1-249-393-11	CARBON	10	5%	1/4W
R707	1-247-903-00	CARBON	1M	5%	1/4W
R708	1-249-429-11	CARBON	10K	5%	1/4W
R709	1-249-429-11	CARBON	10K	5%	1/4W
R710	1-249-429-11	CARBON	10K	5%	1/4W
R801	1-247-743-11	CARBON	220	5%	1/2W
R802	1-249-429-11	CARBON	10K	5%	1/4W
R803	1-249-425-11	CARBON	4.7K	5%	1/4W
R804	1-249-425-11	CARBON	4.7K	5%	1/4W
R805	1-249-417-11	CARBON	1K	5%	1/4W
R806	1-249-433-11	CARBON	22K	5%	1/4W

Ref.No.	Part No.	Description				
R807	⚠ 1-247-702-11	CARBON	150	5%	1/4W	F
R808	1-249-425-11	CARBON	4.7K	5%	1/4W	
R809	1-249-437-11	CARBON	47K	5%	1/4W	
RY801	1-515-720-11	RELAY				
S601	1-554-303-21	SWITCH, KEY BOARD (1)				
S602	1-554-303-21	SWITCH, KEY BOARD (2)				
S603	1-554-303-21	SWITCH, KEY BOARD (3)				
S604	1-554-303-21	SWITCH, KEY BOARD (4)				
S605	1-554-303-21	SWITCH, KEY BOARD (5)				
S606	1-554-303-21	SWITCH, KEY BOARD (6)				
S607	1-554-303-21	SWITCH, KEY BOARD (7)				
S608	1-554-303-21	SWITCH, KEY BOARD (8)				
S609	1-554-303-21	SWITCH, KEY BOARD (9)				
S610	1-554-303-21	SWITCH, KEY BOARD (10)				
S611	1-554-303-21	SWITCH, KEY BOARD (A.SHIFT)				
S612	1-554-303-21	SWITCH, KEY BOARD (B.SHIFT)				
S613	1-554-303-21	SWITCH, KEY BOARD (C.SHIFT)				
S614	1-554-303-21	SWITCH, KEY BOARD (+.TUNING)				
S615	1-554-303-21	SWITCH, KEY BOARD (-.TUNING)				
S616	1-554-303-21	SWITCH, KEY BOARD (BAND)				
S617	1-554-303-21	SWITCH, KEY BOARD (MEMORY)				
S618	1-554-303-21	SWITCH, KEY BOARD (MEMORY SCAN)				
S619	1-554-303-21	SWITCH, KEY BOARD (AUTO)				
S620	1-554-303-21	SWITCH, KEY BOARD (ONECE)				
S621	1-554-303-21	SWITCH, KEY BOARD (DAILY)				
S622	1-554-303-21	SWITCH, KEY BOARD (NEXT)				
S623	1-554-303-21	SWITCH, KEY BOARD (+.TIME)				
S624	1-554-303-21	SWITCH, KEY BOARD (-.TIME)				
S625	1-554-303-21	SWITCH, KEY BOARD (CLOSE)				
S626	1-554-303-21	SWITCH, KEY BOARD (SPEEP)				
S627	1-554-303-21	SWITCH, KEY BOARD (CONTROL)				
S628	1-554-303-21	SWITCH, KEY BOARD (CLEAR)				
S629	1-554-303-21	SWITCH, KEY BOARD (BACK)				
S630	1-554-303-21	SWITCH, KEY BOARD (POWER)				
S631	1-554-303-21	SWITCH, KEY BOARD (FREQUENCY/TIME)				
S632	1-554-303-21	SWITCH, KEY BOARD (MODE)				
X601	1-567-821-21	VIBRATOR, CRYSTAL (4.194304MHz)				
X701	1-578-699-11	OSCILLATOR, CERAMIC (800kHz)				

ACCESSORY & PACKING MATERIAL

4-920-940-01	SHEET (A), PROTECTION
*4-934-860-01	CUSHION

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Sony Corporation
Audio Group

English
90E1651-1
Printed in Japan

©1990.5

Published by Customer Relations and Service Group

DXA-V502

SERVICE MANUAL

AEP Model
UK Model
E Model
Australian Model

DXA-V502 is the deck amplifier section in LBT-V502/V502CD/V502CDM.

Model Name Using Similar Mechanism	HST-D501	
Tape Transport Mechanism Type	DECK A	TCM-170A1
	DECK B	TCM-170B1

SPECIFICATIONS

Amplifier

Continuous RMS power output
60 W + 60 W (6 ohms, at 1 kHz, 0.7% THD)
Music power output 100 W + 100 W (6 ohms, at 1 kHz, 10% THD)

Input	Jack type	Sensitivity	Impedance
PHONO IN	Phono	2 mV	47 kohms
VIDEO/DAT IN	Phono	200 mV	47 kohms
CD IN	Phono	200 mV	47 kohms

Output	Jack type	Impedance
SURROUND SPEAKER	Phono	Accepts speakers of 8 to 16 ohms
HEAD-PHONES	Stereophone	Accepts headphones of 8 ohms or more

Frequency response CD: 15 Hz to 50 kHz $\pm^{0}_{3}$ dB

Cassette deck

Recording system	4-track 2-channel stereo
Frequency response	DOLBY NR OFF With Type II cassette (Sony UX-S) 40 Hz to 14 kHz (±3 dB) With Type I cassette (Sony HF-S) 40 Hz to 13 kHz (±3 dB)
Wow and flutter	0.1% (WRMS)

General

Power requirements

AEP, Italian Models :	220V AC, 50Hz
UK Model :	240V AC, 50Hz
E, Saudi Arabia, Australian Models:	110, 120, 220, 240V AC, 50/60Hz
Power consumption	230W
Weight	Approx. 8 kg
Dimensions	Approx. 355 × 288 × 319 mm (w/h/d, including projections)

Design and specifications subject to change without notice.

Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"DOLBY" and the double-D symbol ⅅ are trademarks of Dolby Laboratories Licensing Corporation.

MICROFILM

STEREO CASSETTE DECK AMPLIFIER

SONY®

TABLE OF CONTENTS

Section Title Page

Specifications ·· 1
Model Identification ·································· 2

1. GENERAL

Location and Function of Parts and Controls ··· 3

2. ADJUSTMENTS

2-1. Mechanical Adjustments ···················· 4
2-2. Electrical Adjustments ······················ 4

3. DIAGRAMS

3-1. Semiconductor Lead Layouts ··············· 8
3-2. Circuit Boards Location ···················· 9
3-3. Printed Wiring Boards ····················· 10
3-4. Schematic Diagram
(Deck Section) ···························· 15
IC Block Diagram ·························· 20
3-5. Schematic Diagram
(Amplifier Section) ························ 21

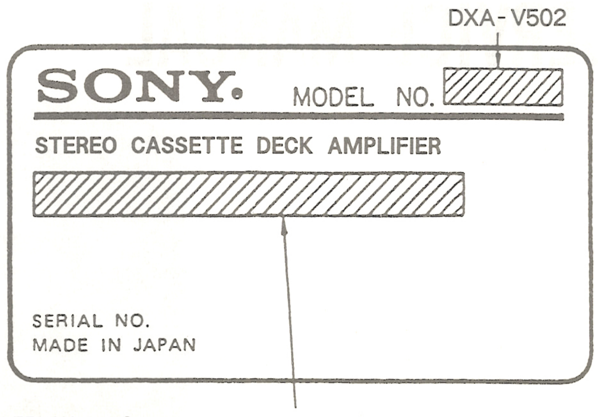
4. EXPLODED VIEWS

4-1. Overall Section ···························· 25
4-2. Front Panel Section ······················· 26
4-3. Mechanism Section (1) ····················· 27
4-4. Mechanism Section (2) ····················· 28

5. ELECTRICAL PARTS LIST ······················ 29

MODEL IDENTIFICATION

– Specification Labels –



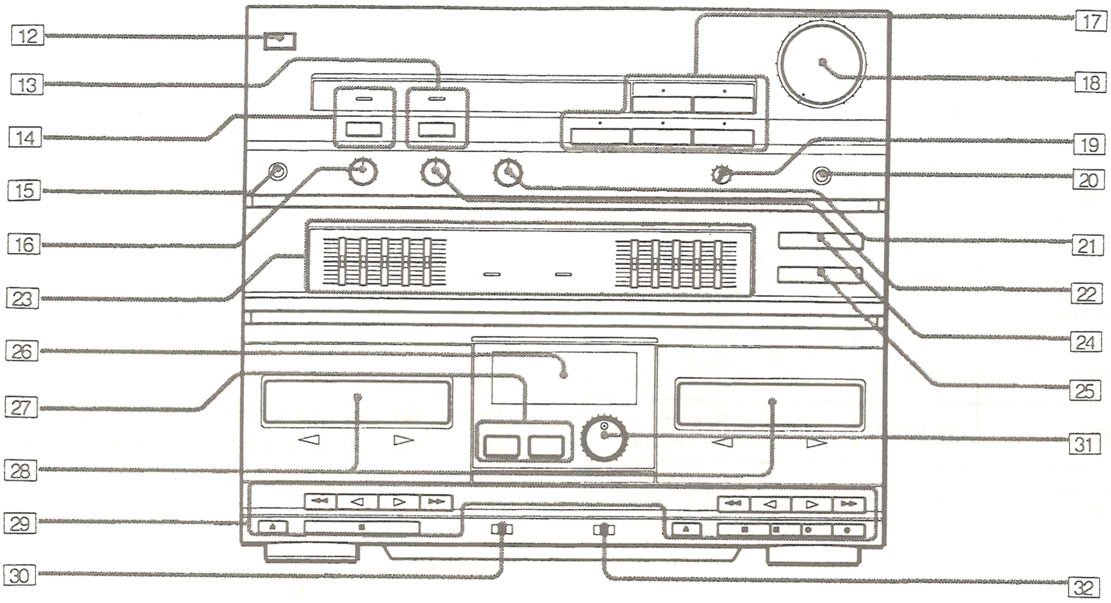
AEP, West Germany, Italian Models : AC: 220V~50/60Hz
UK Model : AC: 240V~50/60Hz
E, Saudi Arabia, Australian Models : AC: 110/120/220/
240V~50/60Hz
150W

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

SECTION 1
GENERAL

LOCATION AND FUNCTION OF PARTS AND CONTROLS



Amplifier

12 POWER switch
13 SURROUND switch and indicator
14 DBFB (SAT*) switch and indicator
15 HEADPHONES jack
16 DBFB (SAT*) LEVEL control
17 Function selectors and indicators
18 VOLUME control
19 MIC (microphone) LEVEL control
20 MIC (microphone) jack
21 BALANCE control
22 SURROUND LEVEL control

Equalizer

23 GRAPHIC EQUALIZER controls and indicators
24 SOUND EFFECT switch
25 EFFECT REC switch

Cassette deck

26 Display
27 SYNCHRO DUBBING buttons
28 Cassette holders
29 Tape operation buttons
  ◀◀: Leftward fast winding
  ▶▶: Rightward fast winding
  ◀: Reverse play
  ▶: Forward play
  ⏏: Ejection
  ■: Stop
  ❚❚: Pause (deck B only)
  ○: recording muting (deck B only)
  ●: recording (deck B only)
30 DIRECTION mode switch
31 REC LEVEL control
32 DOLBY NR (noise reduction) switch

* E, Saudi Arabia, Australian model

SECTION 2
ADJUSTMENTS

2-1. MECHANICAL ADJUSTMENTS

PRECAUTIONS

1. Clean the following parts with a denatured-alcoholmoistened swab:

Record/playback head	pinch roller
erase head	rubber belts
capstan	idlers

2. Demagnetize the record/playback head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.

Torque Measurement **DECK A** **DECK B**

Mode	Torque Motor	Torque
FWD	CQ-102C	30 – 70 g•cm 0.42 – 0.97 oz•inch
FWD back tension	CQ-102C	2 – 6 g•cm 0.03 – 0.08 oz•inch
FF, REW	CQ-201B	90 – 160 g•cm 1.26 – 2.22 oz•inch
REV	CQ-102RB	30 – 70 g•cm 0.42 – 0.97 oz•inch
REV back tension	CQ-102RB	2 – 6 g•cm 0.03 – 0.08 oz•inch

2-2. ELECTRICAL ADJUSTMENTS

PRECAUTIONS

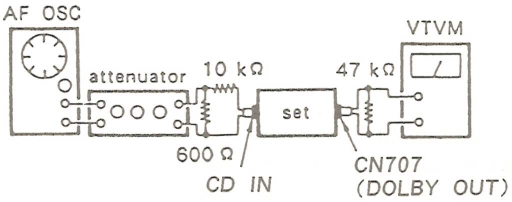
1. The adjusment should be performed in the order given in this service manual.
   The adjustments should be performed for both L-CH and R-CH.
2. Switches and controls should be set as follows unless otherwise specified.
   DOLBY NR switch: OFF
   DIRECTION MODE switch: ⇄
   Function selector: CD

- **Test Tape**

Type	Signal	User for
P-4-A063	6.3kHz, – 10dB	Azimuth Adjustment
P-4-L300	315 Hz, 0 dB	PB Level Adjustment
WS-48B	3 kHz, 0 dB	Tape Speed Adjustment

- Standard Record:
  Deliver the standard input signal level to the CD IN jack and set the REC LEVEL control to obtain the standard output signal level.

– Record Mode –



- **Standard Input Level**

input terminal	CD IN
source impedance	10 kΩ
input level	61.6mV (-22dB)

- **Standard Output Level**

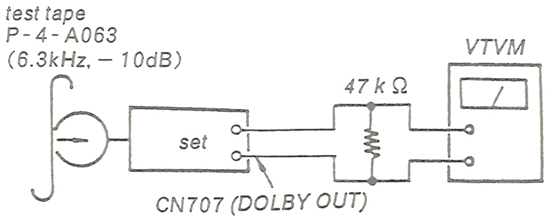
output terminal	CN707 (DOLBY OUT)
load impedance	47 kΩ
output level	56.8mV (-22.7dB)

Record/Playback Head Azimuth Adjsutment

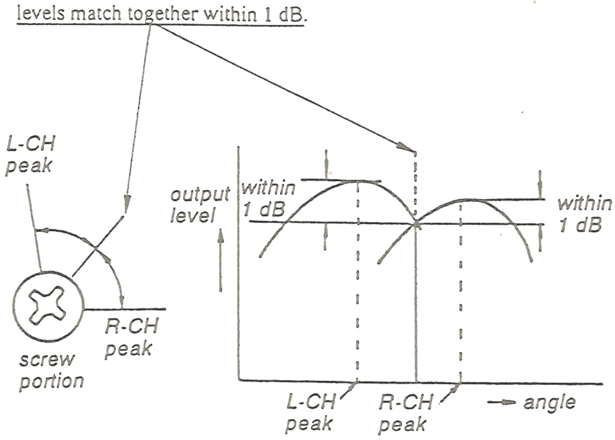
DECK A DECK B

Procedure:

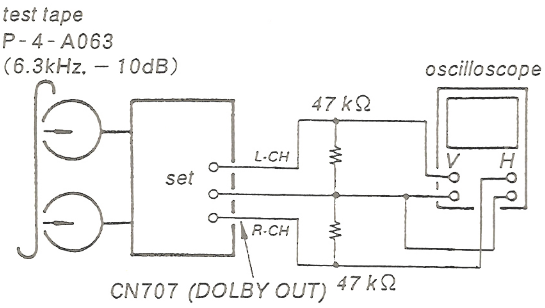
1. Mode: Playback

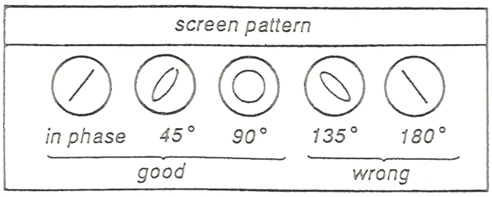

test tape
P-4-A063
(6.3kHz, − 10dB)
VTVM
47 k Ω
set
CN707 (DOLBY OUT)

2. Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 1 dB.


L-CH
peak
screw
portion
R-CH
peak
output
level
within
1 dB
within
1 dB
L-CH
peak
R-CH
peak
angle

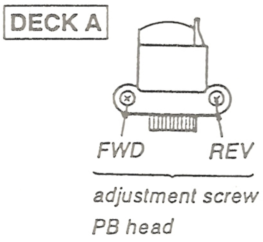
3. Phase Check
   Mode: playback

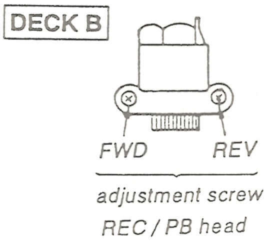

test tape
P-4-A063
(6.3kHz, − 10dB)
oscilloscope
47 kΩ
set
L-CH
R-CH
V
H
CN707 (DOLBY OUT)
47 kΩ


screen pattern
in phase
45°
90°
135°
180°
good
wrong

4. Repeat steps 1 − 3 in REV playback mode.
5. After the adjsutment, lock the screws with locking compound.

Adjsutment Location:

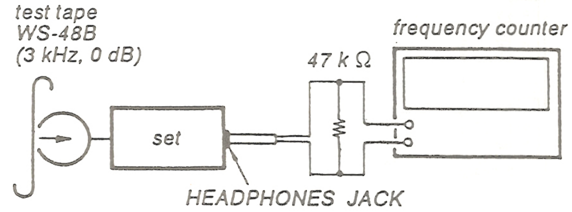

DECK A
FWD
REV
adjustment screw
PB head


DECK B
FWD
REV
adjustment screw
REC / PB head

Tape Speed Adjustment DECK A DECK B

Procedure:

Mode: playback


test tape
WS-48B
(3 kHz, 0 dB)
frequency counter
47 k Ω
set
HEADPHONES JACK

[Hight speed adjustment]

1. Short CN707 (TEST) on main board .
2. Put the set to FWD playback state.
3. Press and keep on pressing HIGH SPEED DUBBING button.
4. On this time, adjust with the semi-fixed variable resistors (H) on the rear side of M1 (Deck A) and M2 (Deck B) so that the frequency counter reads 5,960 ± 60Hz.
5. After adjustment, release the short on CN707 (TEST).

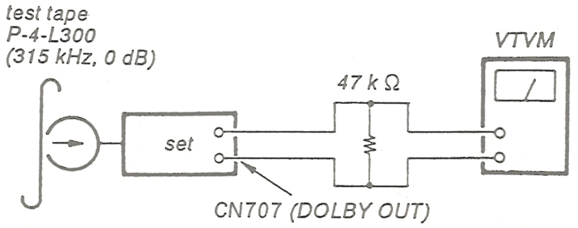
[Normal speed adjustment]

1. Put the set to FWD playback state.
2. On this time, adjust with the semi-fixed variable resistors (N) on the rear side of M1 (Deck A) and M2 (DECK B) so that the frequency counter read 2,980 ± 30Hz.

Adjustment Location : M1/M2

Playback Level Adjsutment DECK A DECK B

Procedure:
Mode: FWD playback


test tape
P-4-L300
(315 kHz, 0 dB)
VTVM
47 k Ω
set
CN707 (DOLBY OUT)

Adjust Deck A: RV41A (L-CH), RV61A (R-CH) and Deck B: RV41B (L-CH), RV61B (R-CH) so that the VTVM reading becomes the adjustment limits below.

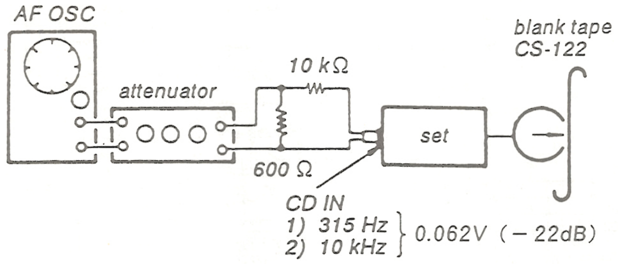
Adjustment Limits:
DOLBY OUT level : − 2.7 ± 2dB (0.46 − 0.71V)
level difference between the channels: within 1.0 dB.

Adjustment Location: MD-A/-B board

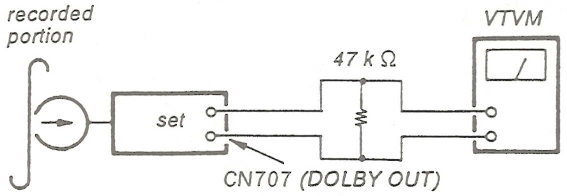
Record BIAS Current Adjustment DECK B

Setting:
- REC LEVEL control:standard record (See page 4.)
- Short test pin CN707 (TEST) on main board

Procedure:
1. Mode record


AF OSC
attenuator
10 kΩ
600 Ω
set
blank tape
CS-122
CD IN
1) 315 Hz
2) 10 kHz
0.062V (− 22dB)

2. Mode: playback


recorded
portion
VTVM
47 k Ω
set
CN707 (DOLBY OUT)

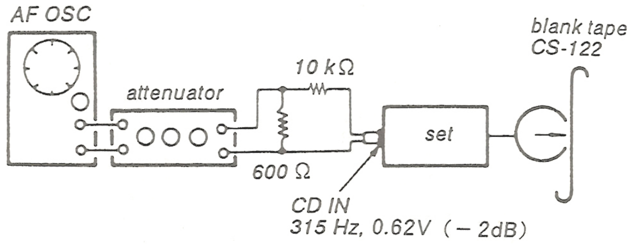
Confirm that the 10 kHz playback output is 0 ± 0.5 dB relative to the 315 Hz output. If necessary, adjust RV42 (L-CH), RV62 (R-CH) and repeat the steps given above.

Adjustment Location: MD-A/-B board

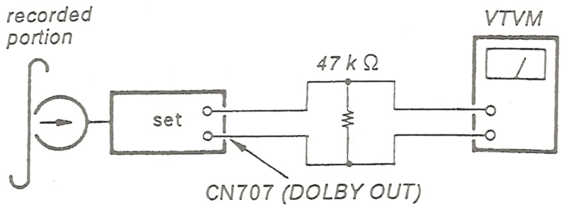
Record Level Adjustment DECK B

Setting:
- REC LEVEL control:standard record (See page 4.)
- Short test pin CN707 (TEST) on main board

Procedure:
1. Mode: record


AF OSC
attenuator
10 kΩ
600 Ω
set
blank tape
CS-122
CD IN
315 Hz, 0.62V (− 2dB)

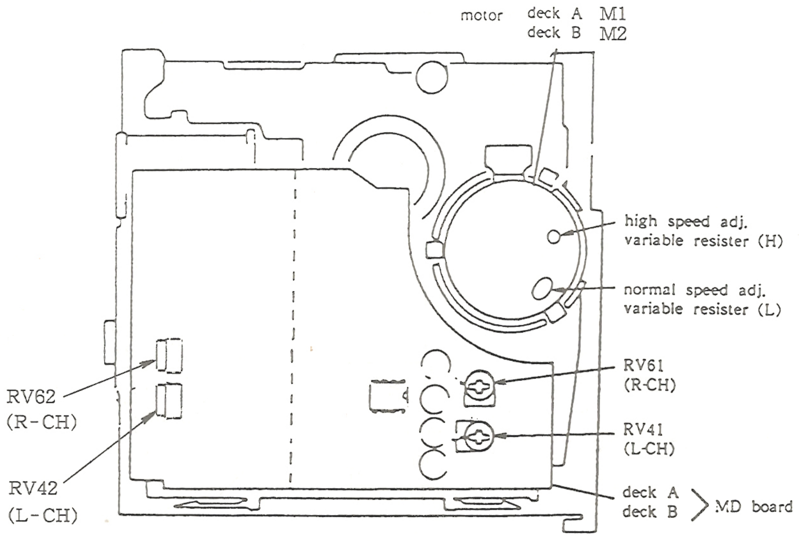
2. Mode: playback


recorded
portion
VTVM
47 k Ω
set
CN707 (DOLBY OUT)

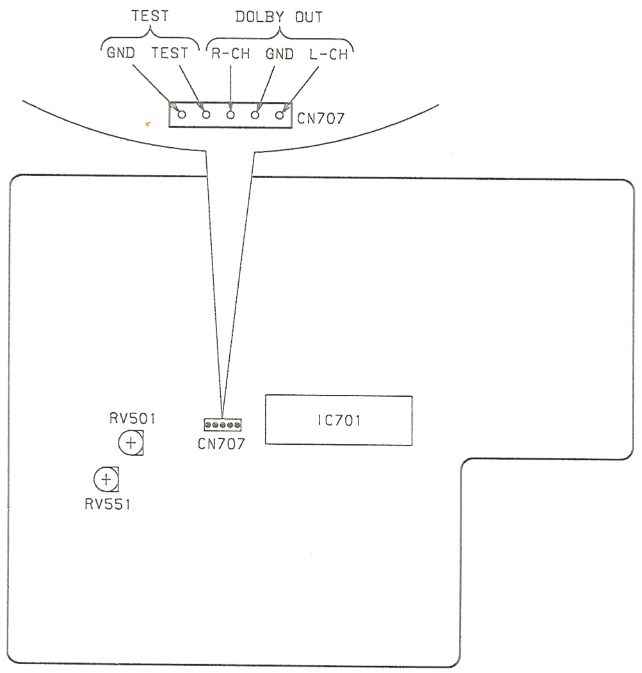
3. Play back the signal recorded in step 1.
   Confirm that the signal level is within − 2.7 ± 0.5 dB (0.54 − 0.60 V). If necessary, adjust RV501 (L-CH), RV551 (R-CH) and repeat the step 1 − 3.

Adjustment Location: main board

−Adjustment Parts Location Diagrams−


motor
deck A M1
deck B M2
high speed adj.
variable resister (H)
normal speed adj.
variable resister (L)
RV61
(R-CH)
RV41
(L-CH)
RV62
(R-CH)
RV42
(L-CH)
deck A
deck B
MD board

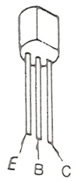
− main board −


TEST
DOLBY OUT
GND
TEST
R-CH
GND
L-CH
CN707
RV501
CN707
IC701
RV551

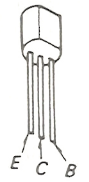
SECTION 3
DIAGRAMS

3-1. SEMICONDUCTOR LEAD LAYOUTS

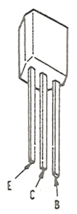
2SB1116



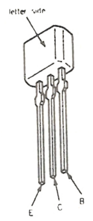
2SB1013-4
2SC945-P
2SC1841-PAFAEA
2SD1616A-K
2SD1387



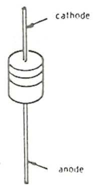
DTA124ES
DTA114ES
DTC114ES
2SC2603-EF
2SC3622A-LK



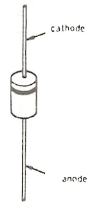
2SA1175-HFE


letter side
E
C
B

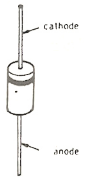
HZS7C2L
HZS6B3L
HZS30-3L
1SS120
1SS202-1
11EQS04


cathode
anode

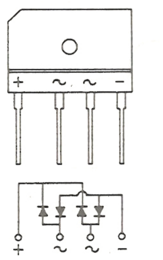
UZP-5.1BB


cathode
anode

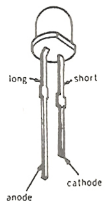
HZ3CLL
10E2N


cathode
anode

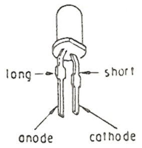
RBV-602-01



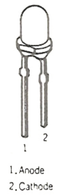
SEL2210S


long
short
anode
cathode

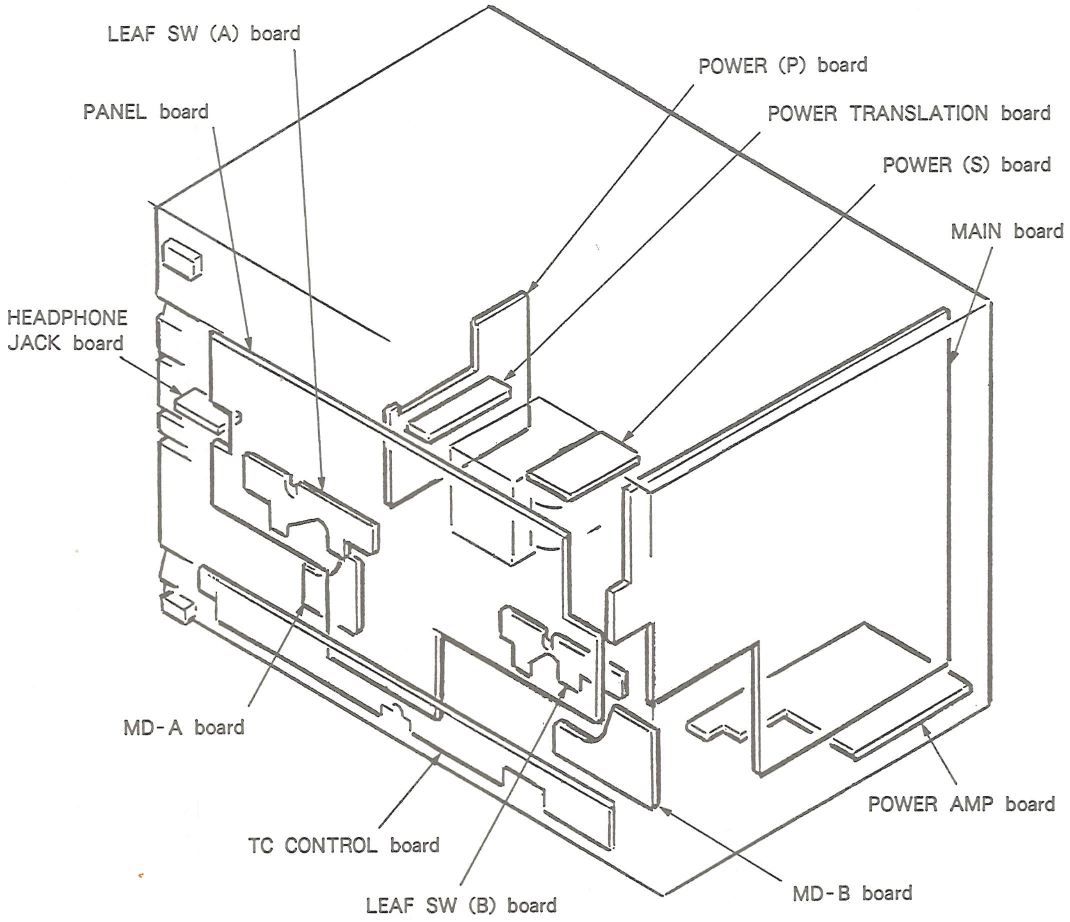
SEL2410E-D
SEL2910A-D


long
short
anode
cathode

SLP9070


1
2
1. Anode
2. Cathode

3-2. CIRCUIT BOARDS LOCATION

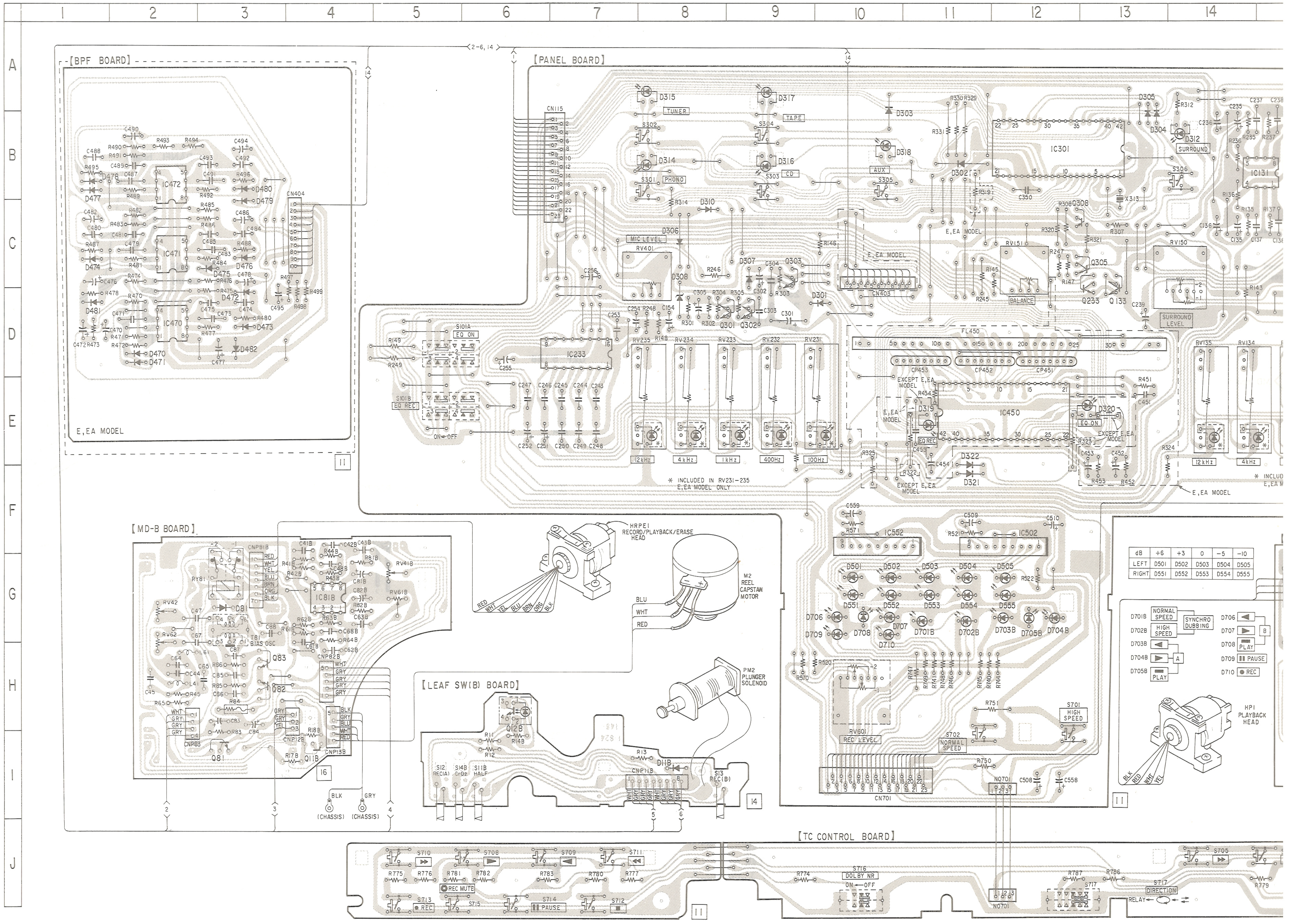

LEAF SW (A) board
POWER (P) board
PANEL board
POWER TRANSLATION board
POWER (S) board
MAIN board
HEADPHONE JACK board
MD-A board
POWER AMP board
TC CONTROL board
MD-B board
LEAF SW (B) board

- Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D11A	I-20	IC101	E-27
D11B	I-8	IC105	B-27
D81	G-3	IC130	B-26
D180	H-31	IC131	B-15
D190	H-32	IC132	B-16
D191	J-29	IC133	D-17
D192	J-29	IC170	H-30
D280	H-31	IC190	J-31
D301	D-10	IC201	D-27
D302	B-11	IC233	D-7
D303	A-10	IC301	B-12
D304	A-14	IC302	B-19
D305	A-13	IC401	D-19
D306	C-8	IC450	E-12
D307	C-9	IC470	D-2
D308	D-8	IC471	C-2
D309	B-20	IC472	B-2
D310	C-8	IC501	B-22
D311	B-16	IC502	F-12
D312	B-14	IC551	B-24
D314	B-8	IC552	F-10
D315	A-8	IC601	G-26
D316	B-9	IC602	H-27
D317	A-9	IC603	D-23
D318	B-10	IC604	B-25
D319	E-11	IC701	E-23
D320	E-13	IC901	D-30
D321	F-11	IC902	E-30
D322	F-11	IC903	D-30
D470	D-2	IC904	H-25
D471	D-2		
D472	D-3	Q11A	I-16
D473	D-3	Q11B	I-4
D474	C-1	Q12A	H-18
D475	C-3	Q12B	H-6
D476	C-3	Q81	I-3
D477	B-1	Q82	H-3
D478	B-1	Q83	H-3
D479	B-3	Q132	C-16
D480	B-3	Q133	C-13
D481	D-1	Q180	H-31
D482	D-3	Q190	H-32
D501	G-10	Q232	B-17
D502	G-10	Q233	C-13
D503	G-11	Q280	H-31
D504	G-11	Q301	D-9
D505	G-12	Q302	D-9
D551	G-10	Q303	C-9
D552	G-10	Q305	C-13
D553	G-11	Q306	B-17
D554	G-11	Q307	A-17
D555	G-12	Q308	C-13
D601	D-23	Q501	B-25
D602	F-24	Q502	F-27
D701A	D-19	Q504	B-23
D701B	G-11	Q551	E-26
D702A	F-19	Q552	F-28
D702B	G-11	Q554	B-23
D703A	E-24	Q601	G-26
D703B	G-12	Q701	E-19
D704A	E-24	Q702	E-19
D704B	G-12	Q703	E-20
D705A	E-25	Q704	F-20
D705B	G-12	Q705	F-19
D706	G-10	Q706	F-20
D707	G-10	Q707	F-22
D708	G-10	Q708	F-22
D709	G-10	Q709	F-24
D710	G-10	Q710	F-25
D901	H-22	Q711	D-21
D902	H-24	Q712	D-21
D903	H-24	Q713	D-21
D904	G-24	Q714	D-20
D905	G-24	Q715	D-20
D906	E-30	Q716	D-20
D907	D-30	Q717	D-20
D908	I-22	Q718	D-20
D909	I-21	Q719	E-24
D910	I-26	Q720	F-24
		Q722	F-24
IC81A	G-16	Q901	I-22
IC81B	G-4		

3-3. PRINTED WIRING BOARDS

• See page 8 for Semiconductor Lead Layouts. • See page 9 for Circuit Boards Location.

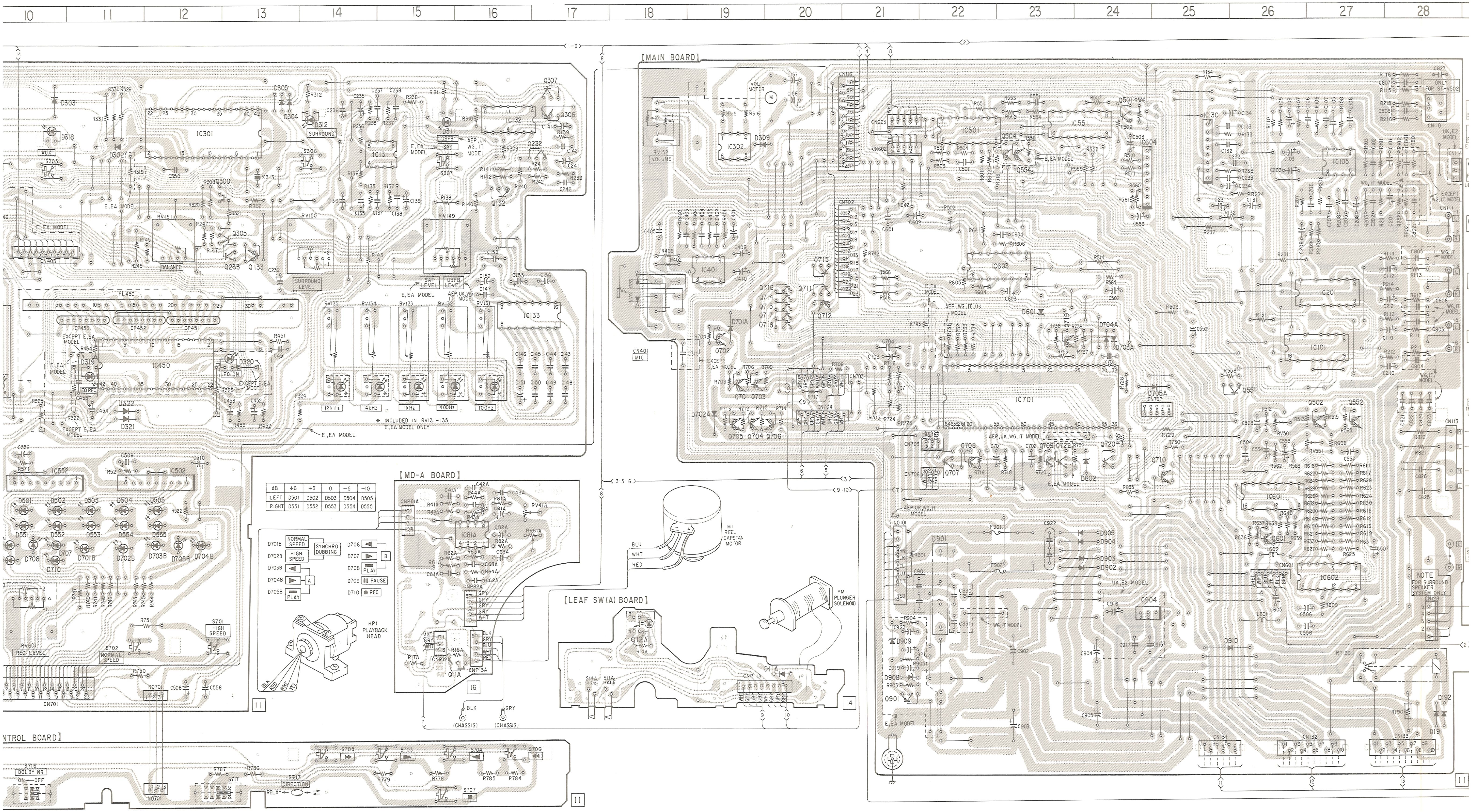

[BPF BOARD]
E,EA MODEL
[PANEL BOARD]
TUNER
TAPE
PHONO
CD
AUX
SURROUND
MIC LEVEL
BALANCE
SURROUND LEVEL
E,EA MODEL
EXCEPT E,EA MODEL
EQ ON
EQ REC
ON — OFF
12kHz
4kHz
1kHz
400Hz
100Hz
* INCLUDED IN RV231-235 E,EA MODEL ONLY
[MD-B BOARD]
HRPE1 RECORD/PLAYBACK/ERASE HEAD
M2 REEL CAPSTAN MOTOR
PM2 PLUNGER SOLENOID
[LEAF SW(B) BOARD]
REC LEVEL
HIGH SPEED
NORMAL SPEED
dB +6 +3 0 −5 −10
LEFT D501 D502 D503 D504 D505
RIGHT D551 D552 D553 D554 D555
NORMAL SPEED
HIGH SPEED
SYNCHRO DUBBING
PLAY
PAUSE
REC
HP1 PLAYBACK HEAD
[TC CONTROL BOARD]
DOLBY NR
REC MUTE
PAUSE
DIRECTION
RELAY
(CHASSIS)
BLK
GRY

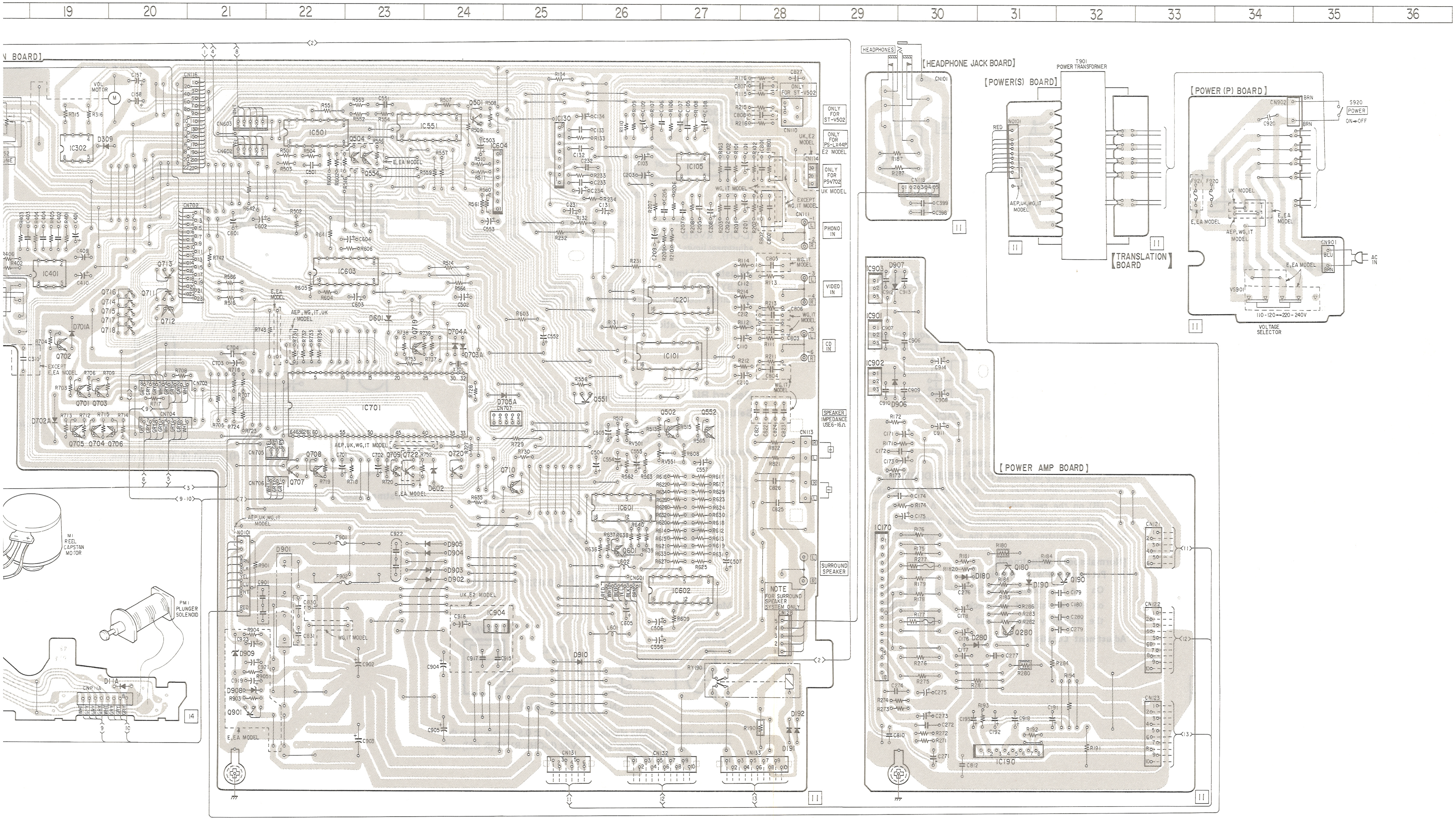
Note on Mounting Diagram:

- ○——— : parts extracted from the component side.
- ⌐⌐→ indicates side identified with part number.

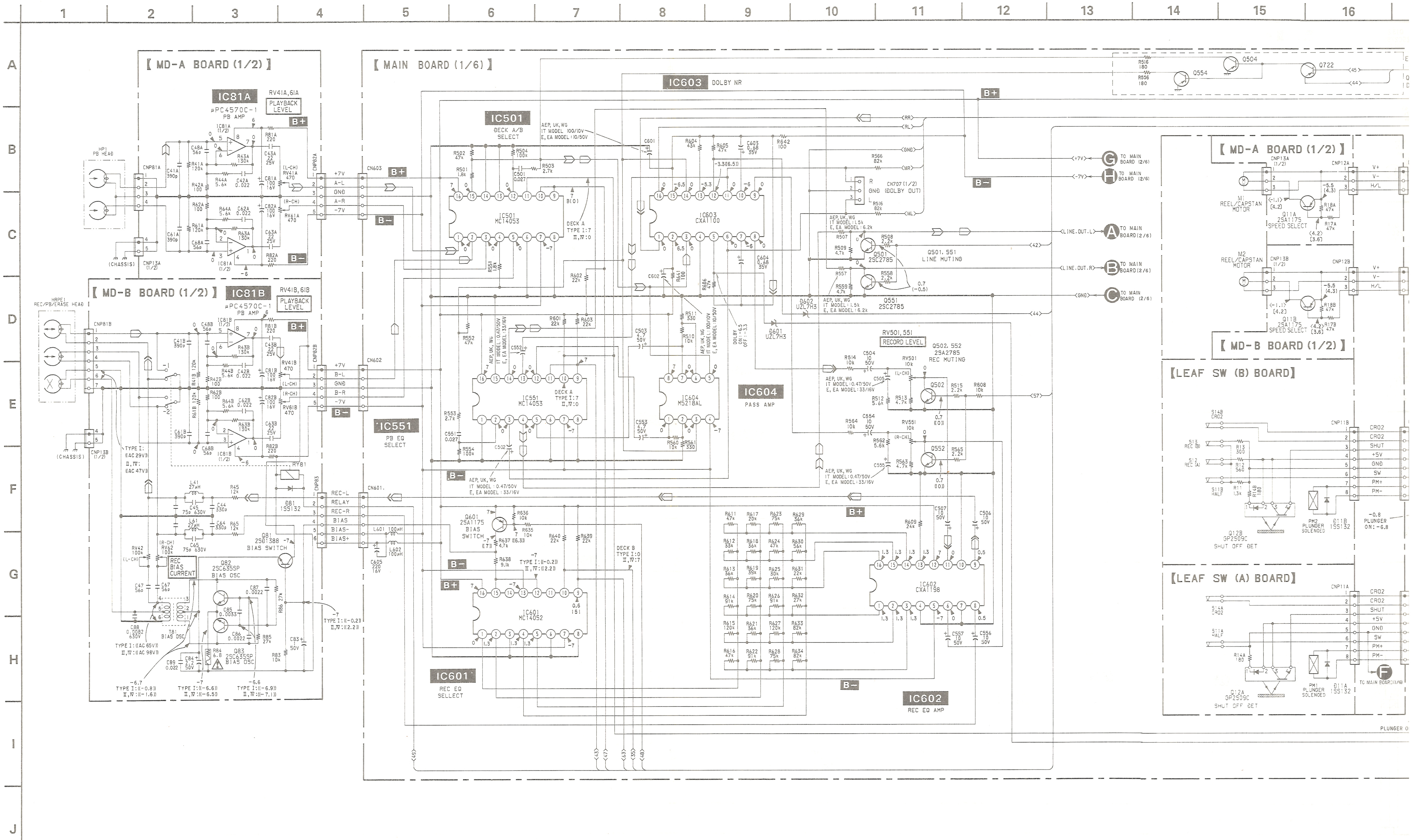
- Mark "E, (E3) Model" is used as mark "E, (E3) and Australia Model".

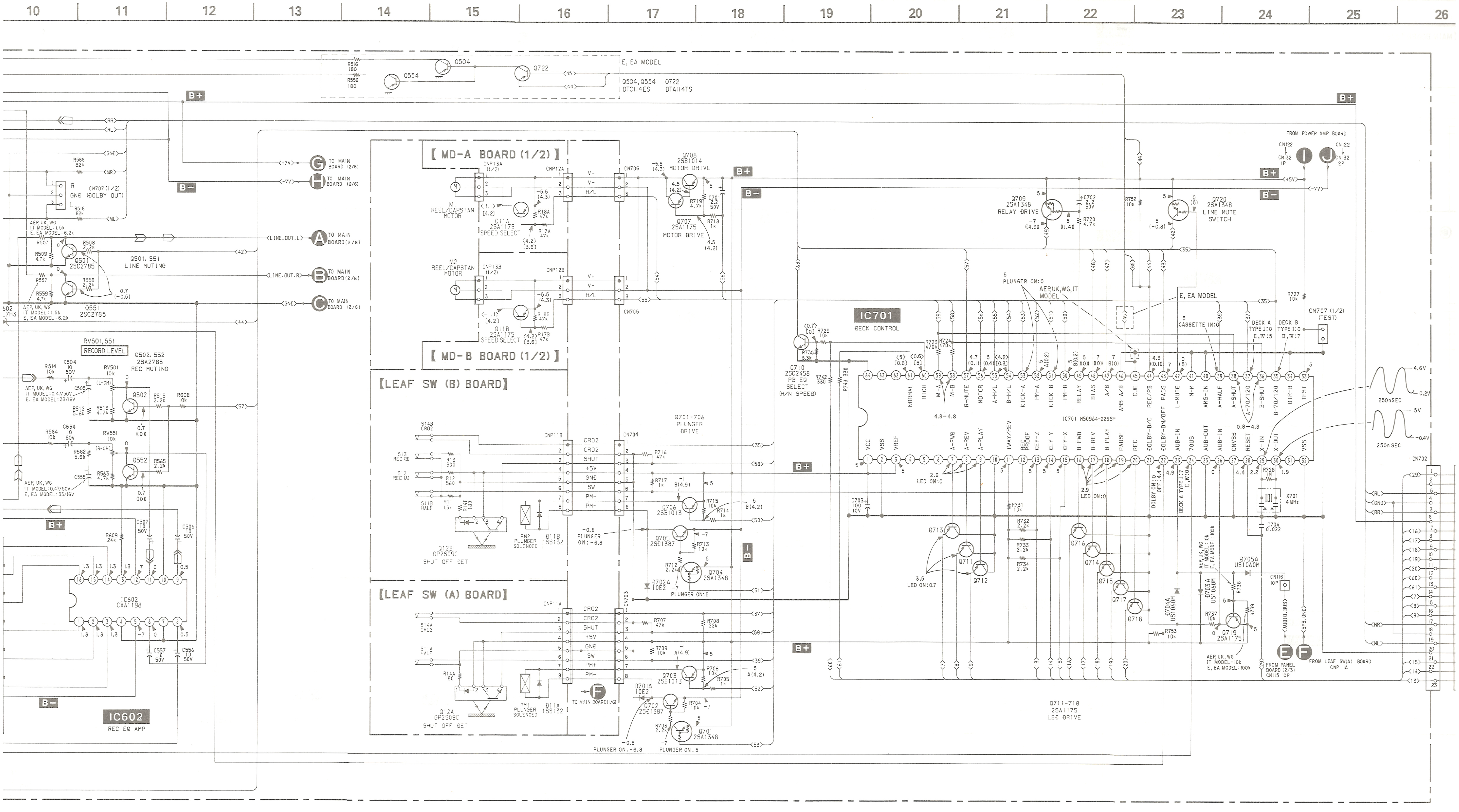
ation.

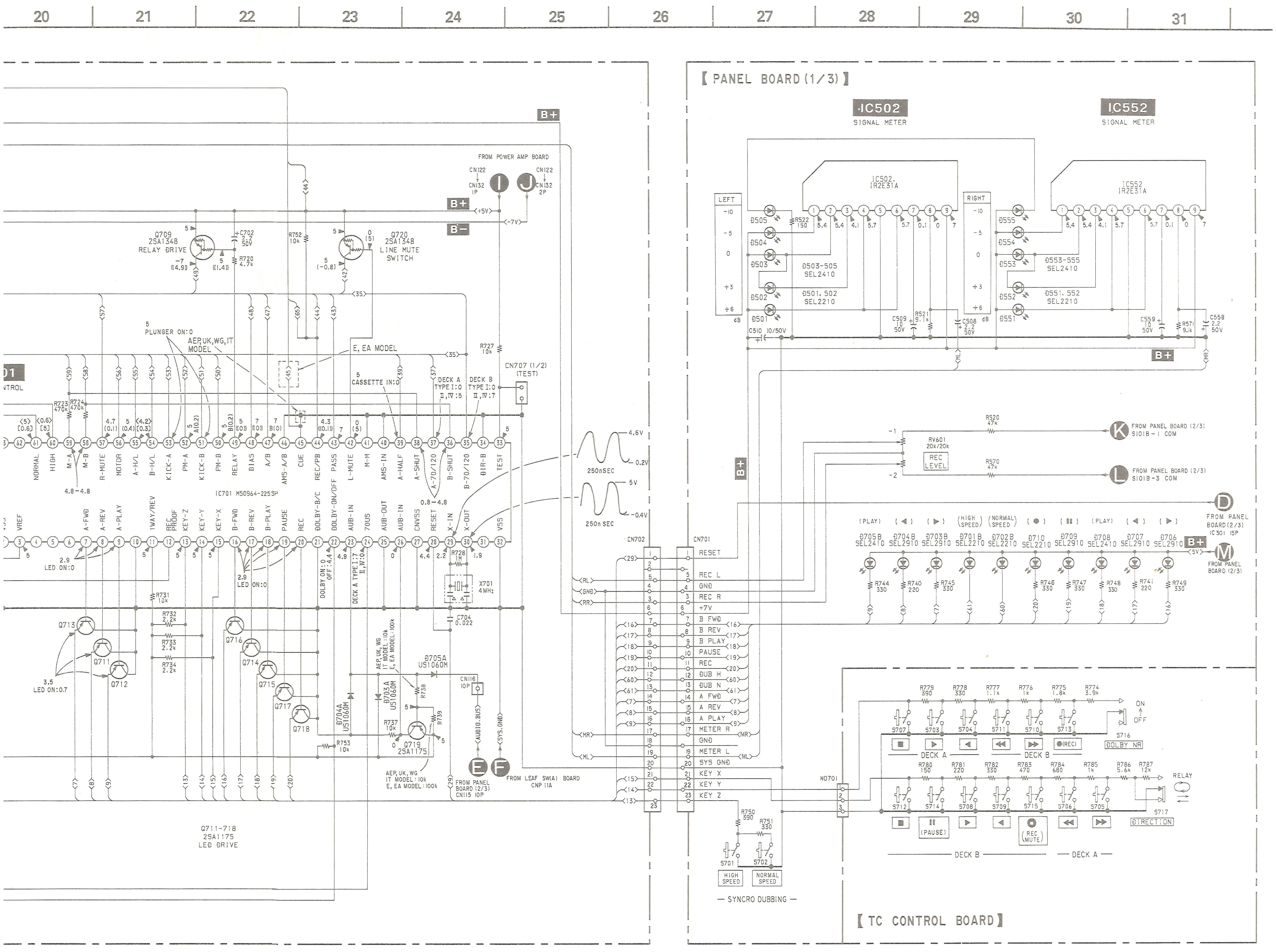

10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
[MAIN BOARD]
[MD-A BOARD]
[LEAF SW(A) BOARD]
NTROL BOARD]
IC301
IC131
IC132
IC450
IC133
IC552
IC502
IC302
IC401
IC501
IC551
IC603
IC701
IC601
IC602
IC130
IC105
IC201
IC101
IC904
IC81A
FL450
RV151 BALANCE
RV150 SURROUND LEVEL
RV149
RV152 VOLUME
RV601 REC LEVEL
12kHz
4kHz
1kHz
400Hz
100Hz
* INCLUDED IN RV131-135 E,EA MODEL ONLY
dB +6 +3 0 -5 -10
LEFT D501 D502 D503 D504 D505
RIGHT D551 D552 D553 D554 D555
D701B NORMAL SPEED
D702B HIGH SPEED
D703B SYNCHRO DUBBING
D704B A
D705B PLAY
D706 B
D707 B
D708 PLAY
D709 PAUSE
D710 REC
HP1 PLAYBACK HEAD
M1 REEL CAPSTAN MOTOR
PM1 PLUNGER SOLENOID
VOL MOTOR
CN401 MIC
S701 HIGH SPEED
S702 NORMAL SPEED
S716 DOLBY NR ON OFF
S717 DIRECTION
RELAY
(CHASSIS)
(CHASSIS)
E,EA MODEL
EXCEPT E,EA MODEL
AEP,UK,WG,IT MODEL
UK,E2 MODEL
WG,IT MODEL
ONLY FOR ST-V502
NOTE FOR SURROUND SPEAKER SYSTEM ONLY
CN131
CN132
CN133


19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
N BOARD]
VOL MOTOR
IC302
D309
IC401
IC501
IC551
IC603
IC604
IC701
IC130
IC105
IC201
IC101
IC601
IC602
IC904
CN116
CN702
CN704
CN705
CN706
CN707
CN113
CN128
CN131
CN132
CN133
Q501
Q504
Q554
Q551
Q502
Q552
Q601
Q707
Q708
Q709
Q710
Q711
Q712
Q713
Q720
Q722
Q901
D601
D602
D704A
D703A
D705A
D701A
D702A
D901
D905
D904
D903
D902
D909
D908
D910
D192
D191
F901
F902
C922
C901
C902
C903
C904
C905
RY190
R190
E, EA MODEL
AEP, WG, IT, UK MODEL
AEP, UK, WG, IT MODEL
AEP, UK, WG, IT MODEL
EXCEPT E, EA MODEL
UK, E2 MODEL
WG, IT MODEL
ONLY FOR ST-V502
ONLY FOR ST-V502
ONLY FOR PS-LX44P E2 MODEL
ONLY FOR PSV702 UK MODEL
EXCEPT WG, IT MODEL
PHONO IN
VIDEO IN
CD IN
SPEAKER IMPEDANCE USE 6-16Ω
SURROUND SPEAKER
NOTE FOR SURROUND SPEAKER SYSTEM ONLY
M1 REEL CAPSTAN MOTOR
PM1 PLUNGER SOLENOID
D11A
CNP11A
HEADPHONES
[HEADPHONE JACK BOARD]
CN101
CN118
R187
R287
C399
C398
T901 POWER TRANSFORMER
[POWER(S) BOARD]
NO101
RED
AEP, UK, WG, IT MODEL
[TRANSLATION BOARD]
[POWER (P) BOARD]
CN902
S920
POWER
ON↔OFF
BRN
BLU
C920
F921
F920
UK MODEL
E, EA MODEL
AEP, WG, IT MODEL
CN901
AC IN
VS901
110-120↔220-240V
VOLTAGE SELECTOR
IC903
IC901
IC902
D907
D906
[POWER AMP BOARD]
IC170
IC190
Q180
Q190
Q280
D180
D190
D280
CN121
CN122
CN123
11
12
13
14

3-4. SCHEMATIC DIAGRAM (DECK SECTION)

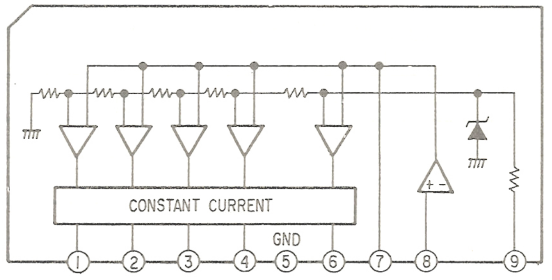

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
【 MD-A BOARD (1/2) 】
【 MAIN BOARD (1/6) 】
【 MD-B BOARD (1/2) 】
IC81A
μPC4570C-1
PB AMP
RV41A,61A
PLAYBACK LEVEL
IC81B
μPC4570C-1
PB AMP
RV41B,61B
PLAYBACK LEVEL
HP1
PB HEAD
HRPE1
REC/PB/ERASE HEAD
(CHASSIS)
CNP81A
CNP81B
CNP13A (1/2)
CNP13B (1/2)
CNP82A
CNP82B
CNP83
CN603
CN602
CN601
+7V
A-L
GND
A-R
-7V
B-L
B-R
REC-L
RELAY
REC-R
BIAS
BIAS-
BIAS+
B+
B-
IC501
DECK A/B SELECT
MC14053
IC603
DOLBY NR
CXA1100
IC551
PB EQ SELECT
MC14053
IC604
PASS AMP
M5218AL
IC601
REC EQ SELLECT
MC14052
IC602
REC EQ AMP
CXA1198
Q81
2SD1388
BIAS SWITCH
Q82
2SC635SP
BIAS OSC
Q83
2SC635SP
BIAS OSC
T81
BIAS OSC
REC BIAS CURRENT
RV42
RV62
RY81
D81
1SS132
L41
27μH
L61
27μH
Q601
2SA1175
BIAS SWITCH
L601 100μH
L602 100μH
Q501, 551
LINE MUTING
Q501
2SC2785
Q551
2SC2785
D602
UZL7H3
D601
UZL7H3
RV501, 551
RECORD LEVEL
Q502, 552
2SA2785
REC MUTING
Q502
Q552
CN707 (1/2)
GND (DOLBY OUT)
DOLBY ON: -5 OFF: -3.3
DECK A TYPE I:7 II,IV:0
DECK B TYPE I:0 II,IV:7
AEP, UK, WG
IT MODEL: 100/10V
E, EA MODEL: 10/50V
AEP, UK, WG
IT MODEL: 0.47/50V
E, EA MODEL: 33/16V
AEP, UK, WG
IT MODEL: 1.5k
E, EA MODEL: 6.2k
TYPE I: (AC 29V)
II,IV: (AC 47V)
TYPE I: (AC 65V)
II,IV: (AC 98V)
TYPE I: (-0.8)
II,IV: (-1.6)
TYPE I: (-6.6)
II,IV: (-6.5)
TYPE I: (-6.9)
II,IV: (-7.1)
TYPE I: (-0.23)
II,IV: (2.2)
TYPE I: (-0.2)
II,IV: (2.2)
TO MAIN BOARD (2/6)
G
H
A
B
C
F
(+7V)
(-7V)
(LINE.OUT.L)
(LINE.OUT.R)
(GND)
(RR)
(RL)
(MR)
(ML)
Q504
Q554
Q722
【 MD-A BOARD (1/2) 】
【 MD-B BOARD (1/2) 】
CNP13A (1/2)
CNP12A
CNP13B (1/2)
CNP12B
M1
REEL/CAPSTAN MOTOR
M2
REEL/CAPSTAN MOTOR
Q11A
2SA1175
SPEED SELECT
Q11B
2SA1175
SPEED SELECT
V+
V-
H/L
【LEAF SW (B) BOARD】
【LEAF SW (A) BOARD】
CNP11B
CNP11A
S14B CRO2
S13 REC (B)
S12 REC (A)
S11B HALF
S14A CRO2
S11A HALF
CRO2
SHUT
+5V
GND
SW
PM+
PM-
PM2 PLUNGER SOLENOID
PM1 PLUNGER SOLENOID
D11B 1SS132
D11A 1SS132
Q12B GP2S09C
SHUT OFF DET
Q12A GP2S09C
SHUT OFF DET
-0.8
PLUNGER ON: -6.8
TO MAIN BOARD (1/6)
PLUNGER O


10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
E, EA MODEL
Q504, Q554 DTC114ES
Q722 DTA114TS
Q504
Q554
Q722
R516 180
R556 180
B+
B−
R566 82k
CN707 (1/2)
R
GND (DOLBY OUT)
L
R516 82k
AEP, UK, WG
IT MODEL : 1.5k
E, EA MODEL : 6.2k
R507
R508 2.2k
R509 4.7k
Q501 2SC2785
Q501, 551
LINE MUTING
R557
R558 2.2k
R559 4.7k
Q551 2SC2785
0.7
(−0.5)
TO MAIN BOARD (2/6)
LINE.OUT.L
LINE.OUT.R
GND
+7V
−7V
RV501, 551
RECORD LEVEL
Q502, 552
2SA2785
REC MUTING
R514 10k
C504 10 50V
RV501 10k
C505
R512 5.6k
R513 4.7k
Q502
R515 2.2k
R608 10k
R564 10k
C554 10 50V
RV551 10k
R562 5.6k
R563 4.7k
C555
Q552
R565 2.2k
AEP, UK, WG
IT MODEL : 0.47/50V
E, EA MODEL : 33/16V
R609 24k
C507 10 50V
C506 10 50V
IC602 CXA1198
C557 10 50V
C556 10 50V
IC602
REC EQ AMP
【MD-A BOARD (1/2)】
CNP13A (1/2)
CNP12A
M1
REEL/CAPSTAN MOTOR
Q11A 2SA1175
SPEED SELECT
R18A 47k
R17A 47k
M2
REEL/CAPSTAN MOTOR
CNP13B (1/2)
CNP12B
Q11B 2SA1175
SPEED SELECT
R18B 47k
R17B 47k
【MD-B BOARD (1/2)】
V+
V−
H/L
CN706
CN705
Q708 2SB1014
MOTOR DRIVE
Q707 2SA1175
MOTOR DRIVE
R719 4.7k
C701 2.2 50V
R718 1k
【LEAF SW (B) BOARD】
CNP11B
S14B CRO2
S13 REC (B)
S12 REC (A)
S11B HALF
R13 300
R12 560
R11 1.3k
R14B 180
Q12B GP2S09C
SHUT OFF DET
PM2 PLUNGER SOLENOID
D11B 1SS132
CRO2
SHUT
+5V
GND
SW
PM+
PM−
CN704
Q701-706
PLUNGER DRIVE
R716 47k
R717 1k
Q706 2SB1013
R715 10k
R714 1k
PLUNGER ON : −6.8
Q705 2SB1387
R713 10k
R712 2.2k
Q704 2SA1348
D702A 10E2
PLUNGER ON : 5
【LEAF SW (A) BOARD】
CNP11A
S14A CRO2
S11A HALF
R14A 180
Q12A GP2S09C
SHUT OFF DET
PM1 PLUNGER SOLENOID
D11A 1SS132
TO MAIN BOARD (1/6)
CN703
R707 47k
R708 22k
R709 10k
Q703 2SB1013
R706 10k
R705 1k
D701A 10E2
Q702 2SB1387
R704 10k
R703 2.2k
Q701 2SA1348
PLUNGER ON : −6.8
PLUNGER ON : 5
Q710 2SC2458
PB EQ SELECT
(H/N SPEED)
R729 10k
R730 3.3k
R742 330
R743 330
R723 470k
R724 470k
IC701
DECK CONTROL
IC701 M50964-225SP
NORMAL
HIGH
M-A
M-B
R-MUTE
MOTOR
A-H/L
B-H/L
KICK-A
PM-A
KICK-B
PM-B
RELAY
BIAS
A/B
AMS-A/B
CUE
REC/PB
PASS
L-MUTE
M-M
AMS-IN
A-HALF
A-SHUT
A-70/120
B-SHUT
B-70/120
BIR-B
TEST
VCC
VSS
VREF
A-FWD
A-REV
A-PLAY
1WAY/REV
REC PROOF
KEY-Z
KEY-Y
KEY-X
B-FWD
B-REV
B-PLAY
PAUSE
REC
DOLBY-B/C
DOLBY-ON/OFF
AUB-IN
70US
AUB-OUT
AUB-IN
CNVSS
RESET
X-IN
X-OUT
VSS
5 PLUNGER ON : 0
AEP, UK, WG, IT MODEL
E, EA MODEL
5 CASSETTE IN : 0
DECK A TYPE I : 0 II, IV : 5
DECK B TYPE I : 0 II, IV : 7
LED ON : 0
DOLBY ON : 0 OFF : 4.4
DECK A TYPE I : 7 II, IV : 0
R726 1M
X701 4MHz
C703 100 10V
C704 0.022
Q709 2SA1348
RELAY DRIVE
C702 2.2 50V
R720 4.7k
R752 10k
Q720 2SA1348
LINE MUTE SWITCH
R727 10k
CN707 (1/2) (TEST)
FROM POWER AMP BOARD
CN122 1P
CN132 1P
CN122 2P
CN132 2P
+5V
−7V
4.6V
0.2V
250nSEC
5V
−0.4V
250nSEC
R731 10k
R732 2.2k
R733 2.2k
R734 2.2k
Q713
Q711
Q712
3.5 LED ON : 0.7
Q716
Q714
Q715
Q717
Q718
D704A US1060M
D703A US1060M
D705A US1060M
AEP, UK, WG IT MODEL : 10k E, EA MODEL : 100k
R738
R737 10k
R739
Q719 2SA1175
R753 10k
AEP, UK, WG IT MODEL : 10k E, EA MODEL : 100k
CN116 10P
AUDIO.BUS
SYS.GND
FROM PANEL BOARD (2/3) CN115 10P
FROM LEAF SW(A) BOARD CNP 11A
Q711-718 2SA1175 LED DRIVE
CN702
RL
GND
RR
MR
ML

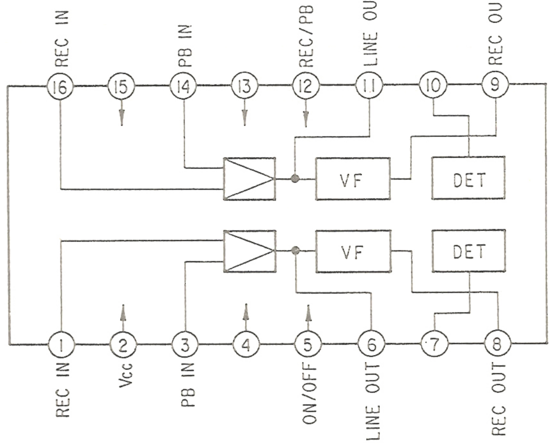

20
21
22
23
24
25
26
27
28
29
30
31
【PANEL BOARD (1/3)】
IC502
SIGNAL METER
IC552
SIGNAL METER
IC502
IR2E31A
IC552
IR2E31A
LEFT
RIGHT
D503-505
SEL2410
D501, 502
SEL2210
D553-555
SEL2410
D551, 552
SEL2210
B+
B−
FROM POWER AMP BOARD
CN122
CN132
Q709
2SA1348
RELAY DRIVE
Q720
2SA1348
LINE MUTE
SWITCH
PLUNGER ON:0
AEP, UK, WG, IT
MODEL
E, EA MODEL
CASSETTE IN:0
DECK A TYPE I:0 II, IV:5
DECK B TYPE I:0 II, IV:7
CN707 (1/2)
(TEST)
IC701 M50964-225SP
NORMAL
HIGH
M-A
M-B
R-MUTE
MOTOR
A-H/L
B-H/L
KICK-A
PH-A
KICK-B
PM-B
RELAY
BIAS
A/B
AMS-A/B
CUE
REC/PB
PASS
L-MUTE
M-M
AMS-IN
A-HALF
A-SHUT
A-70/120
B-SHUT
B-70/120
DIR-B
TEST
VREF
A-FWD
A-REV
A-PLAY
1WAY/REV
REC PROOF
KEY-Z
KEY-Y
KEY-X
B-FWD
B-REV
B-PLAY
PAUSE
REC
DOLBY-B/C
DOLBY-ON/OFF
AUB-IN
70US
AUB-OUT
AUB-IN
CNVSS
RESET
X-IN
X-OUT
VSS
X701
4MHz
250nSEC
250n SEC
Q711-718
2SA1175
LED DRIVE
D704A
US1060M
D705A
US1060M
Q719
2SA1175
CN116
FROM PANEL BOARD (2/3) CN115 10P
FROM LEAF SW(A) BOARD CNP 11A
CN702
CN701
RESET
REC L
GND
REC R
+7V
B FWD
B REV
B PLAY
PAUSE
REC
DUB H
DUB N
A FWD
A REV
A PLAY
METER R
GND
METER L
SYS GND
KEY X
KEY Y
KEY Z
RV601
20k/20k
REC LEVEL
FROM PANEL BOARD (2/3) S101B-1 COM
FROM PANEL BOARD (2/3) S101B-3 COM
FROM PANEL BOARD (2/3) IC301 15P
FROM PANEL BOARD (2/3)
(PLAY)
(HIGH SPEED)
(NORMAL SPEED)
【TC CONTROL BOARD】
DOLBY NR
DECK A
DECK B
RELAY
DIRECTION
(PAUSE)
(REC MUTE)
HIGH SPEED
NORMAL SPEED
— SYNCRO DUBBING —
ON
OFF

IC BLOCK DIAGRAM

IC502, 552 IR2E31A


CONSTANT CURRENT
GND

IC603 CXA1100


REC IN
PB IN
REC/PB
LINE OUT
REC OUT
VF
DET
VF
DET
REC IN
Vcc
PB IN
ON/OFF
LINE OUT
REC OUT

Note on Schematic Diagram:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.
- △ : internal component.
- : nonflammable resistor.
- : fusible resistor.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

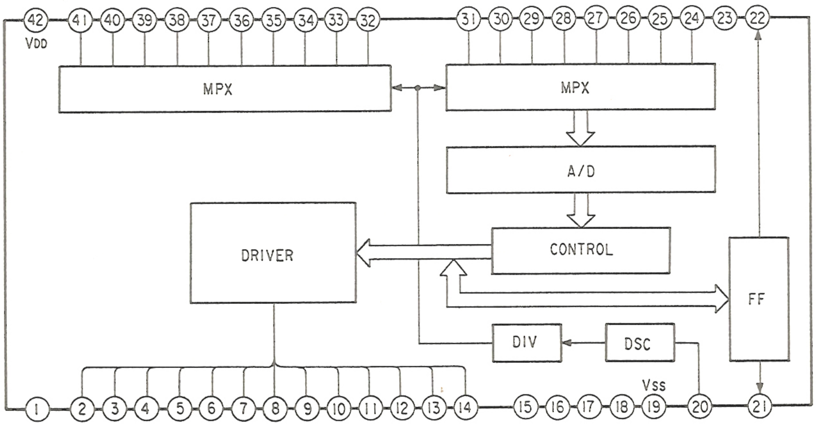
- B+ : B+ Line
- B− : B− Line
- ☐ : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
  no mark : STOP MODE
  ( ): PLAY MODE
  《 》: REC MODE
- Voltages are taken with a VOM (Input impedance 10M Ω) Voltage variations may be noted due to normal production tolerances.
- Signal path.

⇨	: PB (DECK A)	⇨	: FM
⇨	: PB (DECK B)	⇨	: CD
⇨	: REC (DECK B)	⇨	: PHONO

- Mark "E, (E3) Model" is used as mark "E, (E3) and Australia Model".

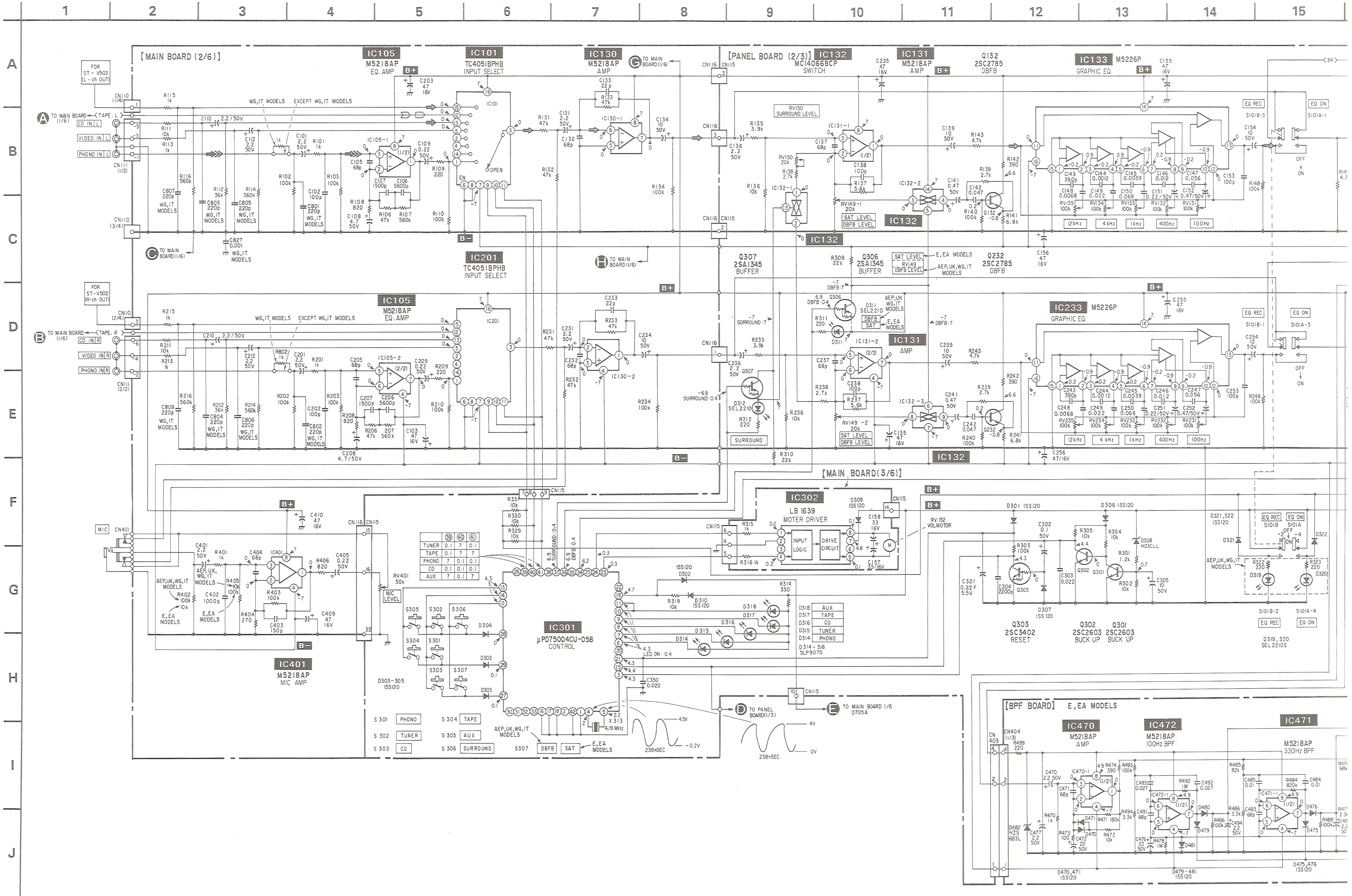
IC BLOCK DIAGRAM

IC450 LC7566

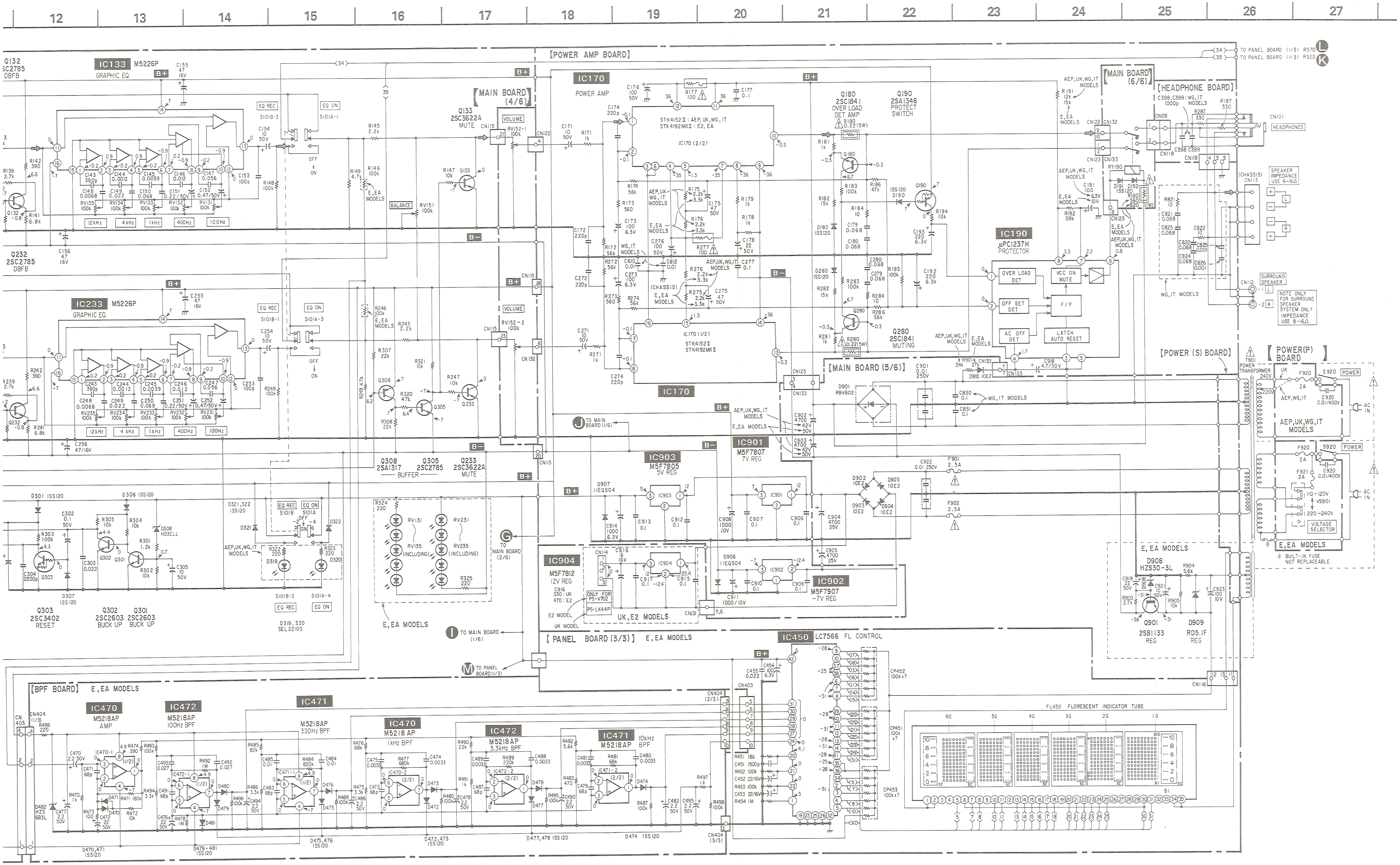

42
VDD
41
40
39
38
37
36
35
34
33
32
31
30
29
28
27
26
25
24
23
22
MPX
MPX
A/D
DRIVER
CONTROL
FF
DIV
DSC
Vss
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21

3-5. SCHEMATIC DIAGR (AMPLIFIER SECTION)

• See page 19 for notes.



[MAIN BOARD (2/6)]
[PANEL BOARD (2/3)]
[MAIN BOARD (3/6)]
[BPF BOARD] E, EA MODELS
IC105 M5218AP EQ. AMP
IC101 TC4051BPHB INPUT SELECT
IC130 M5218AP AMP
IC132 MC14066BCP SWITCH
IC131 M5218AP AMP
Q132 2SC2785 DBFB
IC133 M5226P GRAPHIC EQ.
IC201 TC4051BPHB INPUT SELECT
Q307 2SA1345 BUFFER
Q306 2SA1345 BUFFER
Q232 2SC2785 DBFB
IC233 M5226P GRAPHIC EQ.
IC302 LB1639 MOTER DRIVER
IC301 μPD75004CU-058 CONTROL
IC401 M5218AP MIC AMP
Q303 2SC3402 RESET
Q302 2SC2603 BUCK UP
Q301 2SC2603 BUCK UP
D319, 320 SEL2210S
D314 - 318 SLP9070
D303 - 305 1SS120
IC470 M5218AP AMP
IC472 M5218AP 100Hz BPF
IC471 M5218AP 330Hz BPF
FOR ST-V502 (L-ch OUT)
FOR ST-V502 (R-ch OUT)
TO MAIN BOARD (1/6)
TAPE. L
CD IN L
VIDEO IN L
PHONO IN L
TAPE. R
CD IN R
VIDEO IN R
PHONO IN R
WG, IT MODELS
EXCEPT WG, IT MODELS
RV150 SURROUND LEVEL
SAT LEVEL
DBFB LEVEL
E, EA MODELS
AEP, UK, WG, IT MODELS
SURROUND
12kHz
4kHz
1kHz
400Hz
100Hz
EQ REC
EQ ON
S101B-3
S101A-1
S101B-1
S101A-3
S101B-2
S101A-4
OFF
ON
MIC
MIC LEVEL
RV401 50k
RV152 VOL MOTOR
INPUT LOGIC
DRIVE CIRCUIT
TUNER
TAPE
PHONO
CD
AUX
S301 PHONO
S302 TUNER
S303 CD
S304 TAPE
S305 AUX
S306 SURROUND
S307 DBFB
SAT
X313 4.19MHz
238nSEC
4.5V
-0.2V
4V
0V
LED ON : 0.4
TO PANEL BOARD (1/3)
TO MAIN BOARD 1/6 D705A


12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
IC133 M5226P GRAPHIC EQ.
IC233 M5226P GRAPHIC EQ.
Q132 2SC2785 DBFB
Q232 2SC2785 DBFB
12kHz 4kHz 1kHz 400Hz 100Hz
EQ REC S101B-3
EQ ON S101A-1
EQ REC S101B-1
EQ ON S101A-3
OFF ON
[MAIN BOARD (4/6)]
Q133 2SC3622A MUTE
VOLUME RV152-1 100k
VOLUME RV152-2 100k
BALANCE RV151 100k
E,EA MODELS
Q308 2SA1317 BUFFER
Q305 2SC2785
Q233 2SC3622A MUTE
[POWER AMP BOARD]
IC170 POWER AMP
STK4152II : AEP,UK,WG,IT
STK4192MKII : E2, EA
IC170 (2/2)
IC170 (1/2)
STK4152II
STK4192MKII
IC170
Q180 2SC1841 OVER LOAD DET AMP
Q190 2SA1346 PROTECT SWITCH
Q280 2SC1841 MUTING
IC190 μPC1237H PROTECTOR
OVER LOAD DET
OFF SET DET
AC OFF DET
VCC ON MUTE
F/F
LATCH AUTO RESET
[MAIN BOARD (6/6)]
[HEADPHONE BOARD]
C398,C399 : WG,IT 1000p MODELS
CN101 HEADPHONES
SPEAKER IMPEDANCE USE 6-16Ω
SURROUND SPEAKER
NOTE ONLY FOR SURROUND SPEAKER SYSTEM ONLY IMPEDANCE USE 8-16Ω
WG,IT MODELS
RY190
[MAIN BOARD (5/6)]
D901 RBV602
[POWER (S) BOARD]
[POWER(P) BOARD]
T901 POWER TRANSFORMER
S920 POWER
AC IN
AEP,UK,WG,IT MODELS
E,EA MODELS
110-120V 220-240V V901 VOLTAGE SELECTOR
BUILT-IN FUSE NOT REPLACEABLE
F901 2.5A
F902 2.5A
IC903 M5F7805 5V REG
IC901 M5F7807 7V REG
IC904 M5F7812 12V REG
IC902 M5F7907 -7V REG
ONLY FOR PS-V702
PS-LX44P
UK,E2 MODELS
D908 HZS30-3L
Q901 2SB1133 REG
D909 RD5.1F REG
TO MAIN BOARD (1/6)
TO MAIN BOARD (2/6)
TO PANEL BOARD (1/3)
TO PANEL BOARD (1/3) R570
TO PANEL BOARD (1/3) R520
Q303 2SC3402 RESET
Q302 2SC2603 BUCK UP
Q301 2SC2603 BUCK UP
D319,320 SEL2210S
[PANEL BOARD (3/3)] E,EA MODELS
IC450 LC7566 FL CONTROL
FL450 FLORESCENT INDICATOR TUBE
CP451 100k x7
CP452 100k x7
CP453 100k x7
[BPF BOARD] E,EA MODELS
IC470 M5218AP AMP
IC472 M5218AP 100Hz BPF
IC471 M5218AP 330Hz BPF
IC470 M5218 AP 1kHz BPF
IC472 M5218AP 3.3kHz BPF
IC471 M5218AP 10kHz BPF
D470,471 1SS120
D479-481 1SS120
D475,476 1SS120
D472,473 1SS120
D477,478 1SS120
D474 1SS120
B+ B-

SECTION 4
EXPLODED VIEWS

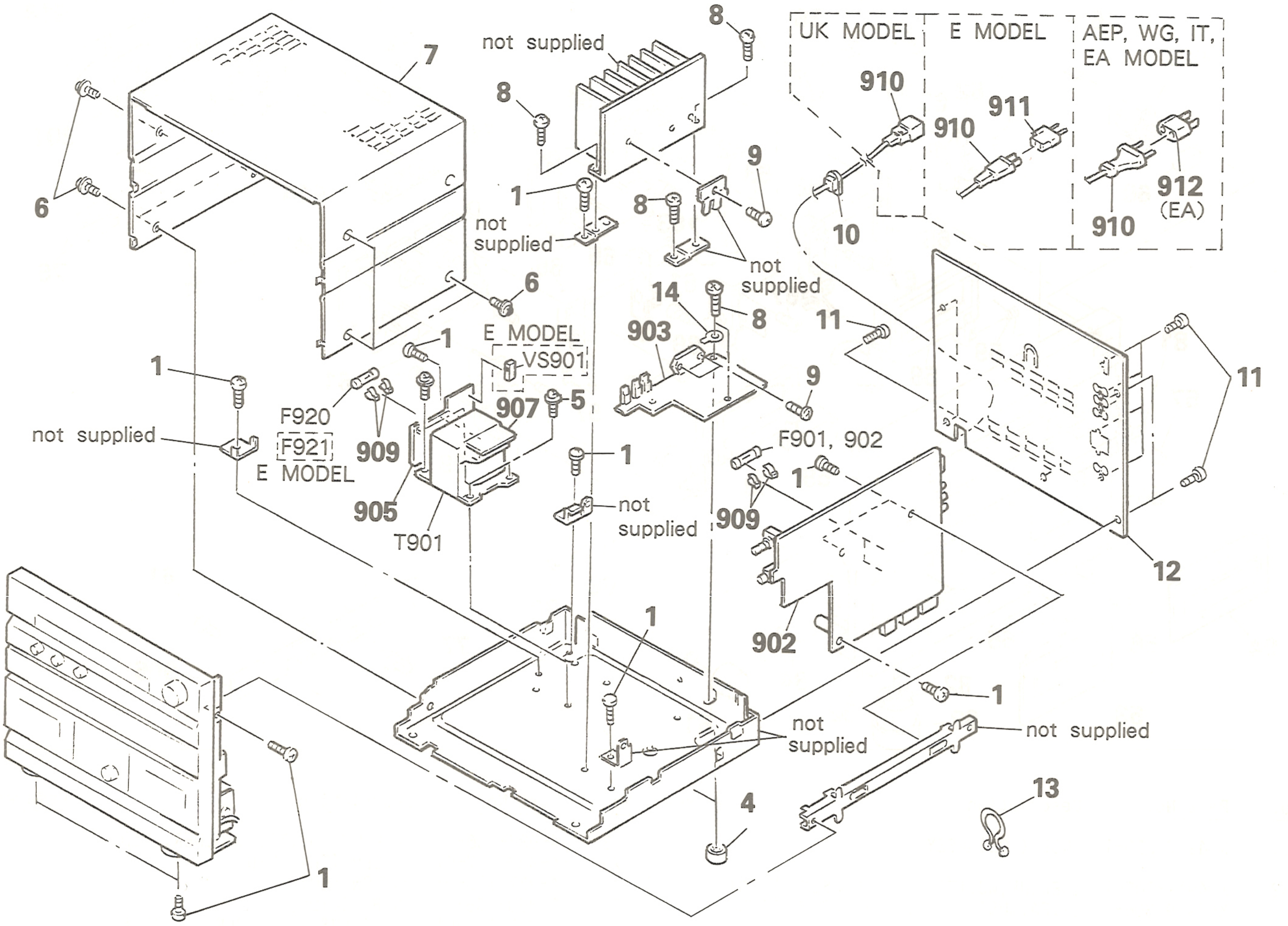
NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- Color Indication of Appearance Parts
  Example:
  (RED) ... KNOB, BALANCE (WHITE)
  ↑ Cabinet's Color ↑ Parts Color
- Mark "E, (E3) Model" is used as mark "E, (E3) and Australia Model".

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

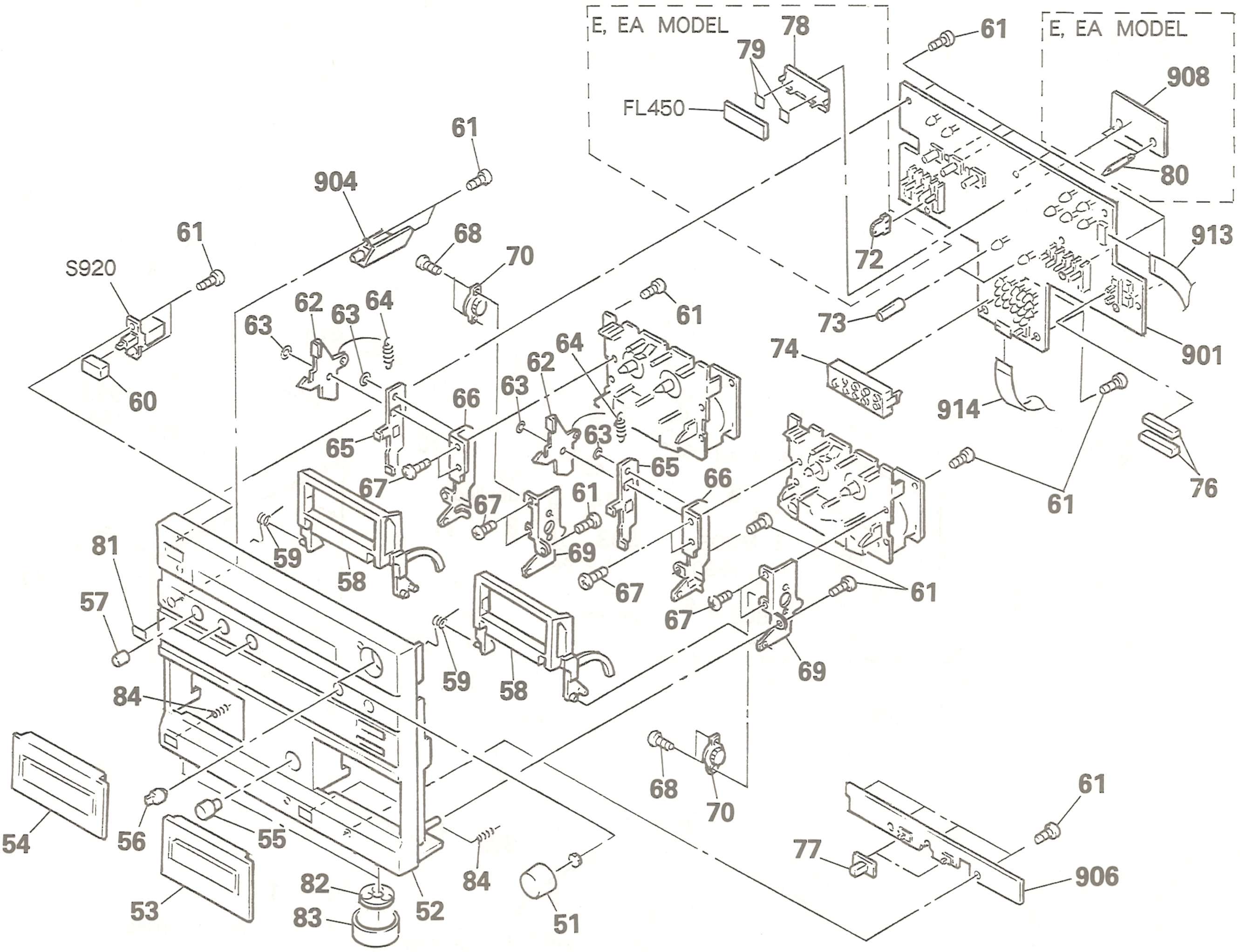
* WG : West Gremany model
IT : Italian model
EA : Saudi Arabia model
AUS : Australian model
E2 : E model with turntable system
E3 : E model without turntable system

4-1. OVERALL SECTION



No.	Part No.	Description	Remarks
1	7-682-547-04	SCREW +BVTT 3X6 (S)	
4	4-933-601-01	FOOT	
5	7-682-560-04	SCREW +BVTT 4X6 (S)	
6	3-704-366-01	SCREW (CASE) (M3X8)	
7	4-935-368-41	CASE	
8	7-685-645-79	SCREW +BVTP 3X6 TYPE2 N-S	
9	4-928-635-11	SCREW, +BV (2.6X16) TAPPING	
10	*3-703-244-00	(AEP,UK,WG,IT,EA)...BUSHING (2104), CORD	
	3-703-571-00	(E,AUS)..........BUSHING (S)(4516), CORD	
11	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
12	*4-937-335-03	(AEP).........PANEL, BACK	
	*4-937-335-13	(E3,EA,AUS)...PANEL, BACK	
	*4-937-335-23	(WG)..........PANEL, BACK	
	*4-937-335-31	(UK)..........PANEL, BACK	
	*4-937-335-43	(E2)..........PANEL, BACK	
	*4-937-335-53	(IT)..........PANEL, BACK	
13	3-315-159-01	PURSE LOOK (DIA.14)	
14	*4-904-446-01	PLATE, GROUND	
902	*A-4334-486-A	(E3,EA,AUS)...MOUNTED PCB, MAIN	
	*A-4334-487-A	(AEP).........MOUNTED PCB, MAIN	
	*A-4334-488-A	(WG,IT).......MOUNTED PCB, MAIN	
	*A-4334-489-A	(UK)..........MOUNTED PCB, MAIN	
	*A-4334-535-A	(E2)..........MOUNTED PCB, MAIN	
903	*A-4334-823-A	(AEP,UK).....MOUNTED PCB, POWER AMPLIFIER	
	*A-4334-824-A	(WG,IT)......MOUNTED PCB, POWER AMPLIFIER	
	*A-4334-828-A	(E,EA,AUS)...MOUNTED PCB, POWER AMPLIFIER	
905	1-634-626-11	PC BOARD, POWER (P)	
907	*1-634-630-11	PC BOARD, POWER (S)	
909	1-533-213-31	HOLDER, FUSE	
910	⚠1-575-654-11	(AEP,WG,IT,EA)...CORD, POWER	
	⚠1-575-656-11	(E,AUS).........CORD, POWER	
	⚠1-575-669-21	(UK).............CORD, POWER	
911	⚠1-569-007-11	(E,AUS)...ADAPTOR, CONVERSION 2P	
912	⚠1-569-008-11	(EA)...ADAPTOR, CONVERSION 2P	
F901	⚠1-532-286-00	FUSE T2.5A	
F902	⚠1-532-286-00	FUSE T2.5A	
F920	⚠1-532-388-51	FUSE T2A	
F921	⚠1-532-388-51	(E,EA,AUS)...FUSE T2A	
T901	⚠1-450-063-11	(AEP,UK,WG,IT)...TRANSFORMER, POWER	
T901	⚠1-450-064-11	(E,EA,AUS).......TRANSFORMER, POWER	
VS901	⚠1-571-722-11	(E,EA,AUS)...SWITCH, VOLTAGE SELECTION (VOLTAGE)	

4-2. FRONT PANEL SECTION

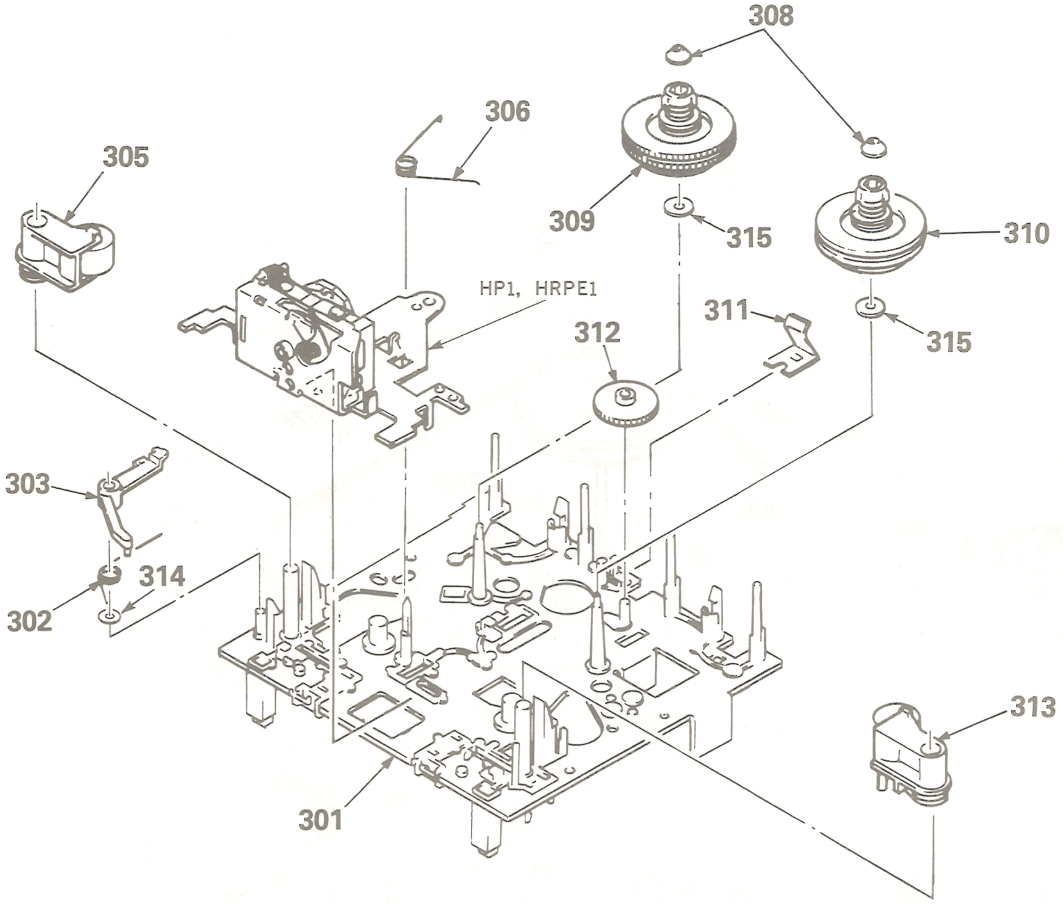

E, EA MODEL
78
79
FL450
61
E, EA MODEL
908
80
913
61
904
68
70
61
S920
60
62
63
64
63
72
73
61
74
901
914
64
62
63
63
66
65
65
67
66
61
67
76
61
81
57
59
58
69
67
61
67
69
59
58
84
54
56
55
53
82
83
52
84
51
68
70
61
77
906

No.	Part No.	Description	Remarks
51	X-4917-299-1	KNOB (VOL) ASSY	
52	X-4919-305-1	(AEP,UK,WG,IT)...PANEL ASSY, FRONT	
	X-4919-306-2	(E,EA,AUS).......PANEL ASSY, FRONT	
53	X-4919-303-1	LID (B) ASSY, CASSETTE	
54	X-4919-302-1	LID (A) ASSY, CASSETTE	
55	X-4919-301-1	KNOB (REC) ASSY	
56	4-937-331-01	KNOB (EQ)	
57	3-349-039-11	KNOB (VOL)	
58	X-3332-482-1	HOLDER ASSY, CASSETTE	
59	3-346-336-11	SPRING, TORSION	
60	3-350-146-01	BUTTON (PW)	
61	4-928-635-01	SCREW, +BV (2.6X8) TAPPING	
62	*3-343-449-01	LEVER (LOCK LEVER)	
63	3-558-708-21	WASHER, STOPPER	
64	3-312-432-00	SPRING, TENSION	
65	*3-329-997-01	LEVER (EJECT)	
66	*X-3329-913-1	BRACKET ASSY	
67	7-621-770-87	SCREW +BVTT 2.6X5 (S)	
68	7-621-255-15	SCREW +PTT 2X3 (S)	
69	*3-346-305-01	BRACKET (DAMPER)	
70	3-319-224-31	DAMPER, SMALL	
72	4-911-230-01	(E,EA,AUS)...KNOB, SLIDE	
73	*4-937-336-01	(AEP,UK,WG,IT)...HOLDER, LED	
74	*4-937-327-01	HOLDER (TC), LED	
76	4-937-318-01	BUTTON (EQ)	
77	3-350-138-01	KNOB (SLIDE)	
78	*4-923-103-01	(E,EA,AUS)...HOLDER, FL TUBE	
79	*4-921-941-21	(E,EA,AUS)...CUSHION (FL)	
80	3-682-419-21	(E,EA,AUS)...HOLDER PCB	
81	*3-703-710-41	STICKER, SONY SYMBOL (12)	
82	4-921-906-01	FELT	
83	4-921-918-01	PLATE, ORNAMENTAL	
84	4-885-182-11	SPRING, TENSION	
901	*A-4334-477-A	(E,EA,AUS)...MOUNTED PCB, PANEL	
	*A-4334-478-A	(AEP).....MOUNTED PCB, PANEL	
	*A-4334-479-A	(WG,IT)...MOUNTED PCB, PANEL	
	*A-4334-480-A	(UK)......MOUNTED PCB, PANEL	
904	*1-634-624-11	PC BOARD, H.P.	
906	*1-634-627-11	PC BOARD, TC CONTROL	
908	*1-634-625-11	(E,EA,AUS)...PC BOARD, BPF	
913	1-575-664-11	WIRE, FLAT TYPE (23 CORE)	
914	1-575-665-11	WIRE, FLAT TYPE (23 CORE)	
FL450	1-519-486-21	(E,EA,AUS)...INDICATOR TUBE, FLORESCENT	
S920	⚠1-553-318-41	SWITCH, PUSH (AC POWER)(1 KEY)(POWER)	

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

4-3. MECHANISM SECTION (1)

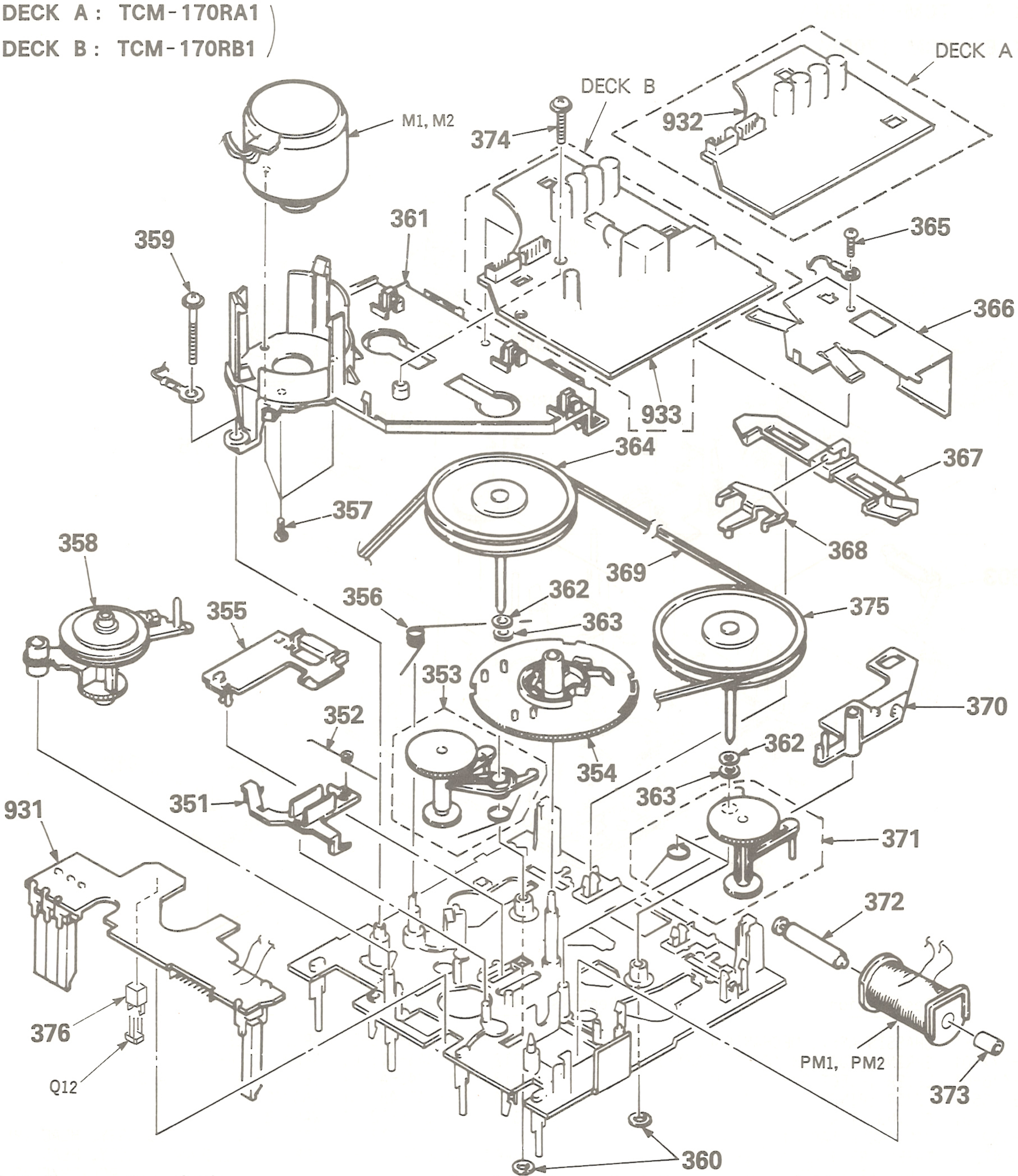
(DECK A : TCM-170RA1
DECK B : TCM-170RB1)



No.	Part No.	Description	Remarks
301	X-3343-439-1	CHASSIS ASSY, MECHANICAL	
302	3-343-477-01	SPRING, TORSION (EJECT SAFTY)	
303	3-343-476-01	LEVER (EJECT SAFETY LEVER)	
305	X-3343-456-1	LEVER (PINCH R) ASSY	
306	3-343-401-01	SPRING, TORSION	
308	3-343-439-01	CAP (REEL TABLE)	
309	X-3343-415-1	TABEL (REV) ASSY, REEL	
310	X-3343-401-1	TABEL ASSY, REEL	
311	3-343-420-01	SPRING, LEAF	
312	3-343-411-01	GEAR (FF GEAR)	
313	X-3343-455-1	LEVER (PINCH F) ASSY	
314	3-343-487-01	WASHER	
315	3-355-802-01	WASHER	
HP1	A-2108-122-C	(DECK A)...CHASSIS ASSY, HEAD (PB)	
HRPE1	A-2108-123-C	(DECK B)...CHASSIS ASSY, HEAD (REC/PB/ERASE)	

4-4. MECHANISM SECTION (2)

(DECK A : TCM-170RA1
DECK B : TCM-170RB1)


DECK A
DECK B
932
374
M1, M2
361
359
365
366
933
364
367
357
358
368
369
356
362
375
355
363
353
370
352
362
354
931
351
363
371
372
376
PM1, PM2
Q12
373
360

No.	Part No.	Description	Remarks
351	3-343-453-01	SLIDER (BRAKE PLATE)	
352	3-343-429-01	SPRING, TORSION	
353	X-3343-454-1	LEVER (TU-R) ASSY	
354	3-343-470-01	GEAR (CAM GEAR)	
355	3-343-461-01	SLIDER	
356	3-343-430-01	SPRING, TORSION	
357	7-627-556-28	SCREW +P 2.6X3.5	
358	X-3343-414-1	LAVER (FR ARM) ASSY	
359	3-355-801-01	SCREW (BTP 2X18)	
360	3-343-473-01	WASHER, NYLON	
361	*X-3343-407-1	BASE (THRUST RETAINER) ASSY	
362	4-605-835-11	WASHER (2.6), POLYSLIDER	
363	3-307-482-00	WASHER, LUMILER	
364	X-3343-416-7	FLYWHEEL (REV) COMPLETE ASSY	
365	7-685-104-19	SCREW +P 2X6 TYPE2 NON-SLIT	
366	3-343-480-01	PLATE, SHIELD	
367	3-343-457-01	SLIDER (REVERSE SLIDER)	

No.	Part No.	Description	Remarks
368	3-343-462-01	LEVER	
369	3-343-426-02	BELT (CAPSTAN BELT SQUARE)	
370	3-343-493-01	LEVER (PM LEVER)	
371	X-3343-453-1	LEVER (TU-F) ASSY	
372	*3-343-425-01	ARBOR (MOVABLE IRON ARBOR), IRON	
373	*3-343-424-01	ARBOR (FIXED IRON ARBOR), IRON	
374	3-343-404-01	SCREW (PTPWH 2X12)	
375	X-3343-429-1	FLYWHEEL COMPLETE ASSY	
376	3-343-419-01	HOLDER (S SENSER A)	
931	*1-624-148-11	PC BOARD, LEAF SW	
932	*1-624-147-11	PC BOARD, MD-A	
933	*1-624-146-11	PC BOARD, MD-B	
M1	X-3343-447-1	(DECK A)...REEL/CAPSTAN MOTOR ASSY	
M2	X-3343-447-1	(DECK B)...REEL/CAPSTAN MOTOR ASSY	
PM1	1-454-456-11	(DECK A)...SOLENOID, PLUNGER	
PM2	1-454-456-11	(DECK B)...SOLENOID, PLUNGER	

SECTION 5

ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF: μF, PF: μμF.

RESISTORS
- All resistors are in ohms.
- F: nonflammable

COILS
- MMH: mH, UH: μH

SEMICONDUCTORS
In each case, U: μ, for example:
UA...: μA..., UPA...: μPA...,
UPC...: μPC, UPD...: μPD...
- Mark "E, (E3) Model" is used as mark "E, (E3) and Australia Model".

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

- WG : West Gremany model
IT : Italian model
EA : Saudi Arabia model
AUS : Australian model
E2 : E model with turntable system
E3 : E model without turntable system

Ref.No.	Part No.	Description			
901	*A-4334-477-A	(E,EA,AUS)...MOUNTED PCB, PANEL			
	*A-4334-478-A	(AEP)........MOUNTED PCB, PANEL			
	*A-4334-479-A	(WG,IT)......MOUNTED PCB, PANEL			
	*A-4334-480-A	(UK).........MOUNTED PCB, PANEL			
902	*A-4334-486-A	(E3,EA,AUS)...MOUNTED PCB, MAIN			
	*A-4334-487-A	(AEP).........MOUNTED PCB, MAIN			
	*A-4334-488-A	(WG,IT).......MOUNTED PCB, MAIN			
	*A-4334-489-A	(UK)..........MOUNTED PCB, MAIN			
	*A-4334-535-A	(E2)..........MOUNTED PCB, MAIN			
903	*A-4334-823-A	(AEP,UK)...MOUNTED PCB, POWER AMPLIFIER			
	*A-4334-824-A	(WG,IT)....MOUNTED PCB, POWER AMPLIFIER			
	*A-4334-828-A	(E,EA,AUS) ...MOUNTED PCB, POWER AMPLIFIER			
904	*1-634-624-11	PC BOARD, H.P.			
905	*1-634-626-11	PC BOARD, POWER (P)			
906	*1-634-627-11	PC BOARD, TC CONTROL			
907	*1-634-630-11	PC BOARD, POWER (S)			
908	*1-634-625-11	(E,EA,AUS)...PC BOARD, BPF			
909	1-533-213-31	HOLDER, FUSE			
910	⚠1-575-654-11	(AEP,WG,IT,EA)...CORD, POWER			
	⚠1-575-656-11	(E,AUS)..........CORD, POWER			
	⚠1-575-669-21	(UK).............CORD, POWER			
911	⚠1-569-007-11	(E,AUS)...ADAPTOR, CONVERSION 2P			
912	⚠1-569-008-11	(EA)...ADAPTOR, CONVERSION 2P			
913	1-575-664-11	WIRE, FLAT TYPE (23 CORE)			
914	1-575-665-11	WIRE, FLAT TYPE (23 CORE)			
931	*1-624-148-11	PC BOARD, LEAF SW			
932	*1-624-147-11	PC BOARD, MD-A			
933	*1-624-146-11	PC BOARD, MD-B			
C48A	1-162-217-31	CERAMIC	56PF	5%	50V
C48B	1-162-217-31	CERAMIC	56PF	5%	50V
C61A	1-162-289-31	CERAMIC	390PF	10%	50V
C61B	1-162-289-31	CERAMIC	390PF	10%	50V
C62A	1-136-157-00	FILM	0.022MF	5%	50V
C62B	1-136-157-00	FILM	0.022MF	5%	50V
C63A	1-124-282-00	ELECT	22MF	20%	25V
C63B	1-124-282-00	ELECT	22MF	20%	25V
C64	1-162-288-31	CERAMIC	330PF	10%	50V
C65	1-136-273-91	FILM	75PF	5%	630V
C67	1-162-217-31	CERAMIC	56PF	5%	50V
C68A	1-162-217-31	CERAMIC	56PF	5%	50V
C68B	1-162-217-31	CERAMIC	56PF	5%	50V
C81A	1-126-101-11	ELECT	100MF	20%	16V
C81B	1-126-101-11	ELECT	100MF	20%	16V
C82A	1-126-101-11	ELECT	100MF	20%	16V
C82B	1-126-101-11	ELECT	100MF	20%	16V
C83	1-124-791-11	ELECT	1MF	20%	50V
C84	1-124-925-11	ELECT	2.2MF	20%	50V
C85	1-130-477-00	MYLAR	0.0033MF	5%	50V
C86	1-130-475-00	MYLAR	0.0022MF	5%	50V
C87	1-130-475-00	MYLAR	0.0022MF	5%	50V
C88	1-136-562-11	FILM	0.0082MF	5%	630V
C89	1-161-494-00	CERAMIC	0.022MF		25V
C101	1-126-161-11	ELECT	2.2MF	20%	50V
C102	1-162-282-31	CERAMIC	100PF	10%	50V
C103	1-126-022-11	ELECT	47MF	20%	16V
C105	1-162-219-31	CERAMIC	68PF	5%	50V
C106	1-130-480-00	MYLAR	0.0056MF	5%	50V
C107	1-130-473-00	MYLAR	0.0015MF	5%	50V
C108	1-124-045-00	ELECT	4.7MF	20%	50V
C109	1-124-464-11	ELECT	0.22MF	20%	50V
C110	1-126-161-11	ELECT	2.2MF	20%	50V
C112	1-126-161-11	ELECT	2.2MF	20%	50V
C131	1-126-161-11	ELECT	2.2MF	20%	50V
C132	1-162-219-31	CERAMIC	68PF	5%	50V
C133	1-162-207-31	CERAMIC	22PF	5%	50V
C134	1-126-059-11	ELECT	10MF	20%	50V
C135	1-126-022-11	ELECT	47MF	20%	16V
C136	1-126-161-11	ELECT	2.2MF	20%	50V
C137	1-162-219-31	CERAMIC	68PF	5%	50V
C138	1-162-282-31	CERAMIC	100PF	10%	50V
C139	1-124-261-00	ELECT	10MF	20%	50V
C141	1-124-465-00	ELECT	0.47MF	20%	50V
C142	1-136-834-11	FILM	0.047MF	5%	50V
C143	1-110-342-11	MYLAR	390PF	5%	50V
C144	1-130-472-00	MYLAR	0.0012MF	5%	50V
C145	1-130-478-00	MYLAR	0.0039MF	5%	50V
C146	1-136-154-00	FILM	0.012MF	5%	50V
C147	1-136-835-11	FILM	0.056MF	5%	50V
C148	1-130-481-00	MYLAR	0.0068MF	5%	50V
C149	1-136-157-00	FILM	0.022MF	5%	50V
C150	1-136-741-11	FILM	0.068MF	5%	50V
C151	1-124-464-11	ELECT	0.22MF	20%	50V
C152	1-124-465-00	ELECT	0.47MF	20%	50V
C153	1-162-282-31	CERAMIC	100PF	10%	50V
C154	1-124-261-00	ELECT	10MF	20%	50V
C155	1-124-589-11	ELECT	47MF	20%	16V
C156	1-124-589-11	ELECT	47MF	20%	16V

Ref.No.	Part No.	Description			
C157	1-124-963-11	ELECT	33MF	20%	16V
C158	1-124-963-11	ELECT	33MF	20%	16V
C171	1-126-059-11	ELECT	10MF	20%	50V
C172	1-162-286-31	CERAMIC	220PF	10%	50V
C173	1-124-443-00	ELECT	100MF	20%	6.3V
C174	1-162-286-31	CERAMIC	220PF	10%	50V
C175	1-124-910-11	ELECT	47MF	20%	50V
C176	1-124-122-11	ELECT	100MF	20%	50V
C177	1-136-742-11	FILM	0.1MF	5%	50V
C178	1-126-233-11	ELECT	22MF	20%	50V
C179	1-136-741-11	FILM	0.068MF	5%	50V
C180	1-136-741-11	FILM	0.068MF	5%	50V
C181	1-162-211-31	CERAMIC	33PF	5%	50V
C191	1-124-443-00	ELECT	100MF	20%	6.3V
C192	1-124-587-11	ELECT	220MF	20%	6.3V
C193	1-124-587-11	ELECT	220MF	20%	6.3V
C201	1-126-161-11	ELECT	2.2MF	20%	50V
C202	1-162-282-31	CERAMIC	100PF	10%	50V
C203	1-126-022-11	ELECT	47MF	20%	16V
C205	1-162-219-31	CERAMIC	68PF	5%	50V
C206	1-130-480-00	MYLAR	0.0056MF	5%	50V
C207	1-130-473-00	MYLAR	0.0015MF	5%	50V
C208	1-124-045-00	ELECT	4.7MF	20%	50V
C209	1-124-464-11	ELECT	0.22MF	20%	50V
C210	1-126-161-11	ELECT	2.2MF	20%	50V
C212	1-126-161-11	ELECT	2.2MF	20%	50V
C231	1-126-161-11	ELECT	2.2MF	20%	50V
C232	1-162-219-31	CERAMIC	68PF	5%	50V
C233	1-162-207-31	CERAMIC	22PF	5%	50V
C234	1-126-059-11	ELECT	10MF	20%	50V
C235	1-126-022-11	ELECT	47MF	20%	16V
C236	1-126-161-11	ELECT	2.2MF	20%	50V
C237	1-162-219-31	CERAMIC	68PF	5%	50V
C238	1-162-282-31	CERAMIC	100PF	10%	50V
C239	1-126-157-11	ELECT	10MF	20%	50V
C241	1-124-465-00	ELECT	0.47MF	20%	50V
C242	1-136-834-11	FILM	0.047MF	5%	50V
C243	1-110-342-11	MYLAR	390PF	5%	50V
C244	1-130-472-00	MYLAR	0.0012MF	5%	50V
C245	1-130-478-00	MYLAR	0.0039MF	5%	50V
C246	1-136-154-00	FILM	0.012MF	5%	50V
C247	1-136-835-11	FILM	0.056MF	5%	50V
C248	1-130-481-00	MYLAR	0.0068MF	5%	50V
C249	1-136-157-00	FILM	0.022MF	5%	50V
C250	1-136-741-11	FILM	0.068MF	5%	50V
C251	1-124-464-11	ELECT	0.22MF	20%	50V
C252	1-124-465-00	ELECT	0.47MF	20%	50V
C253	1-162-282-31	CERAMIC	100PF	10%	50V
C254	1-126-157-11	ELECT	10MF	20%	50V
C255	1-124-589-11	ELECT	47MF	20%	16V
C256	1-124-589-11	ELECT	47MF	20%	16V
C271	1-123-875-11	ELECT	10MF	20%	50V
C272	1-162-286-31	CERAMIC	220PF	10%	50V
C273	1-124-443-00	ELECT	100MF	20%	6.3V
C274	1-162-286-31	CERAMIC	220PF	10%	50V
C275	1-124-910-11	ELECT	47MF	20%	50V
C276	1-124-122-11	ELECT	100MF	20%	50V

Ref.No.	Part No.	Description			
C277	1-136-742-11	FILM	0.1MF	5%	50V
C279	1-136-741-11	FILM	0.068MF	5%	50V
C280	1-136-741-11	FILM	0.068MF	5%	50V
C281	1-162-211-31	CERAMIC	33PF	5%	50V
C301	1-125-486-11	DOUBLE LAYERS	0.22F		5.5V
C302	1-136-742-11	FILM	0.1MF	5%	50V
C303	1-161-494-00	CERAMIC	0.022MF		25V
C304	1-161-494-00	CERAMIC	0.022MF		25V
C305	1-126-157-11	ELECT	10MF	20%	50V
C310	1-164-159-11	CERAMIC	0.1MF		50V
C350	1-161-494-00	CERAMIC	0.022MF		25V
C398	1-162-294-11	CERAMIC	0.001MF	10%	50V
C399	1-162-294-11	CERAMIC	0.001MF	10%	50V
C401	1-124-925-11	ELECT	2.2MF	20%	50V
C402	1-162-294-31	CERAMIC	0.001MF	10%	50V
C403	1-162-284-31	CERAMIC	150PF	10%	50V
C404	1-162-219-31	CERAMIC	68PF	5%	50V
C405	1-124-464-11	ELECT	0.22MF	20%	50V
C409	1-126-022-11	ELECT	47MF	20%	16V
C410	1-126-022-11	ELECT	47MF	20%	16V
C451	1-161-374-11	(E,EA,AUS)...CERAMIC	0.0015MF	30%	16V
C452	1-124-234-00	(E,EA,AUS)...ELECT	22MF	20%	16V
C453	1-124-234-00	(E,EA,AUS)...ELECT	22MF	20%	16V
C454	1-126-177-11	(E,EA,AUS)...ELECT	100MF	20%	6.3V
C455	1-161-494-00	(E,EA,AUS)...CERAMIC	0.022MF		25V
C470	1-124-925-11	(E,EA,AUS)...ELECT	2.2MF	20%	50V
C471	1-162-219-31	(E,EA,AUS)...CERAMIC	68PF	5%	50V
C472	1-126-233-11	(E,EA,AUS)...ELECT	22MF	20%	50V
C473	1-162-219-31	(E,EA,AUS)...CERAMIC	68PF	5%	50V
C474	1-130-477-11	(E,EA,AUS)...MYLAR	0.0033MF	5%	50V
C475	1-130-477-11	(E,EA,AUS)...MYLAR	0.0033MF	5%	50V
C476	1-126-233-11	(E,EA,AUS)...ELECT	22MF	20%	50V
C477	1-124-925-11	(E,EA,AUS)...ELECT	2.2MF	20%	50V
C478	1-124-925-11	(E,EA,AUS)...ELECT	2.2MF	20%	50V
C479	1-162-219-31	(E,EA,AUS)...CERAMIC	68PF	5%	50V
C480	1-130-477-11	(E,EA,AUS)...MYLAR	0.0033MF	5%	50V
C481	1-130-477-11	(E,EA,AUS)...MYLAR	0.0033MF	5%	50V
C482	1-124-925-11	(E,EA,AUS)...ELECT	2.2MF	20%	50V
C483	1-162-219-31	(E,EA,AUS)...CERAMIC	68PF	5%	50V
C484	1-136-153-00	(E,EA,AUS)...MYLAR	0.01MF	5%	50V
C485	1-136-153-00	(E,EA,AUS)...MYLAR	0.01MF	5%	50V
C486	1-124-925-11	(E,EA,AUS)...ELECT	2.2MF	20%	50V
C487	1-162-219-31	(E,EA,AUS)...CERAMIC	68PF	5%	50V
C488	1-130-477-11	(E,EA,AUS)...MYLAR	0.0033MF	5%	50V
C489	1-130-477-11	(E,EA,AUS)...MYLAR	0.0033MF	5%	50V
C490	1-124-925-11	(E,EA,AUS)...ELECT	2.2MF	20%	50V
C491	1-162-219-31	(E,EA,AUS)...CERAMIC	68PF	5%	50V
C492	1-136-158-00	(E,EA,AUS)...MYLAR	0.027MF	5%	50V
C493	1-136-158-00	(E,EA,AUS)...MYLAR	0.027MF	5%	50V
C494	1-124-925-11	(E,EA,AUS)...ELECT	2.2MF	20%	50V
C495	1-124-925-11	(E,EA,AUS)...ELECT	2.2MF	20%	50V
C501	1-136-158-00	FILM	0.027MF	5%	50V
C502	1-124-902-00	(E,EA,AUS).......ELECT	33MF	20%	16V
C502	1-126-300-11	(AEP,UK,WG,IT)...ELECT	0.47MF	20%	50V
C503	1-124-045-00	ELECT	4.7MF	20%	50V
C504	1-126-059-11	ELECT	10MF	20%	50V

Ref.No.	Part No.	Description
C505	1-124-902-00	(E,EA,AUS).......ELECT 33MF 20% 16V
C505	1-126-300-11	(AEP,UK,WG,IT)...ELECT 0.47MF 20% 50V
C506	1-126-059-11	(AEP,UK,WG,IT)...ELECT 10MF 20% 50V
C507	1-126-059-11	(AEP,UK,WG,IT)...ELECT 10MF 20% 50V
C508	1-126-161-11	(AEP,UK,WG,IT)...ELECT 2.2MF 20% 50V
C509	1-124-261-00	ELECT 10MF 20% 50V
C510	1-124-261-00	ELECT 10MF 20% 50V
C551	1-136-158-00	FILM 0.027MF 5% 50V
C552	1-124-300-11	(AEP,UK,WG,IT)...ELECT 0.47MF 20% 50V
C552	1-124-902-00	(E,EA,AUS).......ELECT 33MF 20% 16V
C553	1-124-045-00	ELECT 4.7MF 20% 50V
C554	1-126-059-11	ELECT 10MF 20% 50V
C555	1-124-902-00	(E,EA,AUS).......ELECT 33MF 20% 16V
C555	1-126-300-11	(AEP,UK,WG,IT)...ELECT 0.47MF 20% 50V
C556	1-126-059-11	ELECT 10MF 20% 50V
C557	1-126-059-11	ELECT 10MF 20% 50V
C558	1-126-161-11	ELECT 2.2MF 20% 50V
C559	1-124-261-00	ELECT 10MF 20% 50V
C601	1-123-875-11	(E,EA,AUS).......ELECT 10MF 20% 50V
C601	1-124-994-11	(AEP,UK,WG,IT)...ELECT 100MF 20% 10V
C602	1-123-875-11	(E,EA,AUS).......ELECT 10MF 20% 50V
C602	1-124-994-11	(AEP,UK,WG,IT)...ELECT 100MF 20% 10V
C603	1-131-587-11	TANTALUM 0.68MF 10% 35V
C604	1-131-587-11	TANTALUM 0.68MF 10% 35V
C605	1-126-024-11	ELECT 220MF 20% 16V
C701	1-126-161-11	ELECT 2.2MF 20% 50V
C702	1-126-161-11	ELECT 2.2MF 20% 50V
C703	1-124-994-11	ELECT 100MF 20% 10V
C704	1-161-494-00	CERAMIC 0.022MF 25V
C801	1-162-286-31	(WG,IT)...CERAMIC 220PF 10% 50V
C802	1-162-286-31	(WG,IT)...CERAMIC 220PF 10% 50V
C803	1-162-286-31	(WG,IT)...CERAMIC 220PF 10% 50V
C804	1-162-286-31	(WG,IT)...CERAMIC 220PF 10% 50V
C805	1-162-286-31	(WG,IT)...CERAMIC 220PF 10% 50V
C806	1-162-286-31	(WG,IT)...CERAMIC 220PF 10% 50V
C807	1-162-286-31	(WG,IT)...CERAMIC 220PF 10% 50V
C808	1-162-286-31	(WG,IT)...CERAMIC 220PF 10% 50V
C810	1-161-379-00	(WG,IT)...CERAMIC 0.01MF 30% 16V
C812	1-161-379-00	(WG,IT)...CERAMIC 0.01MF 30% 16V
C821	1-136-163-00	(WG,IT)...FILM 0.068MF 5% 50V
C822	1-136-163-00	(WG,IT)...FILM 0.068MF 5% 50V
C823	1-136-163-00	(WG,IT)...FILM 0.068MF 5% 50V
C824	1-136-163-00	(WG,IT)...FILM 0.068MF 5% 50V
C825	1-162-294-31	(WG,IT)...CERAMIC 0.001MF 10% 50V
C826	1-162-294-31	(WG,IT)...CERAMIC 0.001MF 10% 50V
C827	1-162-294-31	(WG,IT)...CERAMIC 0.001MF 10% 50V
C830	1-136-165-00	(WG,IT)...FILM 0.1MF 5% 50V
C831	1-136-165-00	(WG,IT)...FILM 0.1MF 5% 50V
C901	1-102-394-11	CERAMIC 0.01MF 250V
C902	1-126-224-11	(AEP,UK,WG,IT)...ELECT 4700MF 20% 42V
C902	1-126-258-11	(E,EA,AUS).......ELECT 4700MF 20% 50V
C903	1-126-224-11	(AEP,UK,WG,IT)...ELECT 4700MF 20% 42V
C903	1-126-258-11	(E,EA,AUS).......ELECT 4700MF 20% 50V
C904	1-124-564-11	ELECT 4700MF 20% 25V
C905	1-124-564-11	ELECT 4700MF 20% 25V
C906	1-136-742-11	FILM 0.1MF 5% 50V
C907	1-136-742-11	FILM 0.1MF 5% 50V
C908	1-124-473-11	ELECT 1000MF 20% 10V
C909	1-136-742-11	FILM 0.1MF 5% 50V
C910	1-136-742-11	FILM 0.1MF 5% 50V
C911	1-124-473-11	ELECT 1000MF 20% 10V
C912	1-136-742-11	FILM 0.1MF 5% 50V
C913	1-136-742-11	FILM 0.1MF 5% 50V
C914	1-124-471-00	ELECT 1000MF 20% 6.3V
C915	1-136-742-11	(UK,E2)...FILM 0.1MF 5% 50V
C916	1-126-025-11	(UK)....ELECT 330MF 20% 16V
C916	1-126-103-11	(E2)....ELECT 470MF 20% 16V
C917	1-136-742-11	(E,EA,AUS)...FILM 0.1MF 5% 50V
C918	1-124-045-00	ELECT 4.7MF 20% 50V
C919	1-126-233-11	(E,EA,AUS)...ELECT 22MF 20% 50V
C920	1-161-744-00	CERAMIC 0.01MF 400V
C921	1-123-875-11	(E,EA,AUS)...ELECT 10MF 20% 50V
C922	1-102-394-11	CERAMIC 0.01MF 250V
C923	1-124-443-00	(E,EA,AUS)...ELECT 100MF 20% 6.3V
C999	1-101-004-00	CERAMIC 0.01MF 50V
CN1	1-562-327-00	SOCKET, CONNECTOR 3P
CN2	1-562-327-00	SOCKET, CONNECTOR 3P
CN3	1-562-327-00	SOCKET, CONNECTOR 3P
CN101	1-507-981-11	JACK (LARGE TYPE)(HEADPHONES)
CN102	*1-564-508-11	PLUG, CONNECTOR 5P
CN110	*1-566-856-11	SOCKET, CONNECTOR 5P (ONLY FOR ST-V502)
CN111	1-507-911-11	JACK, PIN 6P (PHONO/VIDEO/CD)
CN112	1-507-997-11	JACK, PIN 2P (SURROUND SPEAKER)
CN113	1-537-240-31	TERMINAL BOARD (CHECKER PIN)(SPEAKER)
CN114	*1-566-210-11	(UK,E2)...PIN, CONNECTOR 3P (ONLY FOR PS-V702)
CN115	*1-568-865-11	SOCKET, CONNECTOR 23P
CN116	*1-568-839-11	SOCKET, CONNECTOR 23P
CN118	*1-564-508-11	PLUG, CONNECTOR 5P
CN121	1-569-402-11	PLUG, CONNECTOR 6P
CN122	1-569-400-11	PLUG, CONNECTOR 10P
CN123	1-569-400-11	PLUG, CONNECTOR 10P
CN128	*1-564-508-11	PLUG, CONNECTOR 5P
CN131	1-569-408-11	SOCKET, CONNECTOR 6P
CN132	1-569-406-11	SOCKET, CONNECTOR 10P
CN133	1-569-406-11	SOCKET, CONNECTOR 10P
CN401	1-565-117-11	JACK, LARGE TYPE (MIC)
CN403	*1-568-451-11	(E,EA,AUS)...HOUSING, CONNECTOR (PC BOARD) 10P
CN404	*1-569-488-11	(E,EA,AUS)...PIN, CONNECTOR (PC BOARD) 10P
CN601	*1-564-340-61	PIN, CONNECTOR 6P
CN602	*1-564-339-61	PIN, CONNECTOR 5P
CN603	*1-564-339-00	PIN, CONNECTOR 5P
CN701	*1-568-865-11	SOCKET, CONNECTOR 23P
CN702	*1-568-839-11	SOCKET, CONNECTOR 23P
CN703	*1-564-342-11	PIN, CONNECTOR 8P
CN704	*1-564-342-61	PIN, CONNECTOR 8P
CN705	*1-564-337-00	PIN, CONNECTOR 3P
CN706	*1-564-337-61	PIN, CONNECTOR 3P

Ref.No.	Part No.	Description
CN707	*1-565-042-11	HOUSING, CONNECTOR (PC BOARD) 5P
CN901	*1-564-321-00	PIN, CONNECTOR 2P
CN902	*1-560-595-00	TERMINAL (WITH BASE)
CNP11A	1-564-501-11	PIN, CONNECTOR 8P
CNP11B	1-564-501-11	PIN, CONNECTOR 8P
CNP12A	*1-564-337-00	PIN, CONNECTOR 3P
CNP12B	*1-564-337-61	PIN, CONNECTOR 3P
CNP13A	*1-564-707-11	PIN, CONNECTOR (SMALL TYPE) 5P
CNP13B	*1-564-707-11	PIN, CONNECTOR (SMALL TYPE) 5P
CNP81A	*1-564-706-11	PIN, CONNECTOR (SMALL TYPE) 4P
CNP81B	*1-564-709-11	PIN, CONNECTOR (SMALL TYPE) 7P
CNP82A	*1-564-339-00	PIN, CONNECTOR 5P
CNP82B	*1-564-339-61	PIN, CONNECTOR 5P
CNP83	*1-564-340-61	PIN, CONNECTOR 6P
CP451	1-233-081-11	(E,EA,AUS)..COMPOSITION CIRCUIT BLOCK 100KX7
CP452	1-233-081-11	(E,EA,AUS)..COMPOSITION CIRCUIT BLOCK 100KX7
CP453	1-233-081-11	(E,EA,AUS)..COMPOSITION CIRCUIT BLOCK 100KX7
D11A	8-719-107-94	DIODE 1SS202-1
D11B	8-719-107-94	DIODE 1SS202-1
D81	8-719-107-94	DIODE 1SS202-1
D180	8-719-912-20	DIODE 1SS120
D190	8-719-912-20	DIODE 1SS120
D191	8-719-912-20	DIODE 1SS120
D192	8-719-912-20	DIODE 1SS120
D280	8-719-912-20	DIODE 1SS120
D301	8-719-912-20	DIODE 1SS120
D302	8-719-912-20	DIODE 1SS120
D303	8-719-912-20	DIODE 1SS120
D304	8-719-912-20	DIODE 1SS120
D305	8-719-912-20	DIODE 1SS120
D306	8-719-912-20	DIODE 1SS120
D307	8-719-912-20	DIODE 1SS120
D308	8-719-942-33	DIODE HZ3CLL
D309	8-719-912-20	DIODE 1SS120
D310	8-719-912-20	DIODE 1SS120
D311	8-719-975-60	DIODE SLP9070
D312	8-719-975-60	DIODE SLP9070
D314	8-719-975-60	DIODE SLP9070 (PHONO)
D315	8-719-975-60	DIODE SLP9070 (TUNER)
D316	8-719-975-60	DIODE SLP9070 (CD)
D317	8-719-975-60	DIODE SLP9070 (TAPE)
D318	8-719-975-60	DIODE SLP9070 (AUX)
D319	8-719-301-39	DIODE SEL2210S
D320	8-719-301-39	DIODE SEL2210S
D321	8-719-912-20	DIODE 1SS120
D322	8-719-912-20	DIODE 1SS120
D470	8-719-912-20	(E,EA,AUS)...DIODE 1SS120
D471	8-719-912-20	(E,EA,AUS)...DIODE 1SS120
D472	8-719-912-20	(E,EA,AUS)...DIODE 1SS120
D473	8-719-912-20	(E,EA,AUS)...DIODE 1SS120
D474	8-719-912-20	(E,EA,AUS)...DIODE 1SS120
D475	8-719-912-20	(E,EA,AUS)...DIODE 1SS120

Ref.No.	Part No.	Description
D476	8-719-912-20	(E,EA,AUS)...DIODE 1SS120
D477	8-719-912-20	(E,EA,AUS)...DIODE 1SS120
D478	8-719-912-20	(E,EA,AUS)...DIODE 1SS120
D479	8-719-912-20	(E,EA,AUS)...DIODE 1SS120
D480	8-719-912-20	(E,EA,AUS)...DIODE 1SS120
D481	8-719-912-20	(E,EA,AUS)...DIODE 1SS120
D482	8-719-933-38	(E,EA,AUS)...DIODE HZS6B3L
D501	8-719-301-39	DIODE SEL2210S
D502	8-719-301-39	DIODE SEL2210S
D503	8-719-301-44	DIODE SEL2410E-D
D504	8-719-301-44	DIODE SEL2410E-D
D505	8-719-301-44	DIODE SEL2410E-D
D551	8-719-301-39	DIODE SEL2210S
D552	8-719-301-39	DIODE SEL2210S
D553	8-719-301-44	DIODE SEL2410E-D
D554	8-719-301-44	DIODE SEL2410E-D
D555	8-719-301-44	DIODE SEL2410E-D
D601	8-719-933-50	DIODE HZS7C2L
D602	8-719-933-50	DIODE HZS7C2L
D701A	8-719-200-77	DIODE 10E2N
D701B	8-719-301-39	DIODE SEL2210S
D702A	8-719-200-77	DIODE 10E2N
D702B	8-719-301-39	DIODE SEL2210S
D703A	8-719-912-20	DIODE 1SS120
D703B	8-719-301-61	DIODE SEL2910A-D
D704A	8-719-912-20	DIODE 1SS120
D704B	8-719-301-61	DIODE SEL2910A-D
D705A	8-719-912-20	DIODE 1SS120
D705B	8-719-301-44	DIODE SEL2410E-D
D706	8-719-301-61	DIODE SEL2910A-D
D707	8-719-301-61	DIODE SEL2910A-D
D708	8-719-301-44	DIODE SEL2410E-D
D709	8-719-301-61	DIODE SEL2910A-D
D710	8-719-301-39	DIODE SEL2210S
D901	8-719-302-38	DIODE RBV-602-01
D902	8-719-200-77	DIODE 10E2N
D903	8-719-200-77	DIODE 10E2N
D904	8-719-200-77	DIODE 10E2N
D905	8-719-200-77	DIODE 10E2N
D906	8-719-210-21	DIODE 11EQS04
D907	8-719-210-21	DIODE 11EQS04
D908	8-719-934-23	(E,EA,AUS)...DIODE HZS30-3L
D909	8-719-014-60	(E,EA,AUS)...DIODE UZP-5.1BB
D910	8-719-200-77	DIODE 10E2N
F901	⚠1-532-286-00	FUSE T2.5A
F902	⚠1-532-286-00	FUSE T2.5A
F920	⚠1-532-388-51	FUSE T2A
F921	⚠1-532-388-51	(E,EA,AUS)...FUSE T2A
FL450	1-519-486-21	(E,EA,AUS)..INDICATOR TUBE, FLORESCENT
HP1	A-2108-122-C	(DECK A)...CHASSIS ASSY, HEAD
HRPE1	A-2108-123-C	(DECK B)...CHASSIS ASSY, HEAD
IC81A	8-759-111-44	IC UPC4570C-1
IC81B	8-759-111-44	IC UPC4570C-1
IC101	8-759-208-06	IC TC4051BPHB
IC105	8-759-634-51	IC M5218AP
IC130	8-759-634-50	IC M5218AL

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref.No.	Part No.	Description
IC131	8-759-634-51	IC M5218AP
IC132	8-759-000-49	IC MC14066BCP
IC133	8-759-602-04	IC M5226P
IC170	8-749-941-52	(AEP,UK,WG,IT)...IC STK4152II
IC170	8-759-111-68	(E,EA,AUS).......IC STK4192MK2
IC190	8-759-111-68	IC UPC1237HA
IC201	8-759-208-06	IC TC4051BPHB
IC233	8-759-602-04	IC M5226P
IC301	8-759-149-27	IC UPD75004CU-058
IC302	8-759-820-62	IC LB1639
IC401	8-759-634-51	IC M5218AP
IC450	8-759-820-07	(E,EA,AUS)...IC LC7566
IC470	8-759-634-51	(E,EA,AUS)...IC M5218AP
IC471	8-759-634-51	(E,EA,AUS)...IC M5218AP
IC472	8-759-634-51	(E,EA,AUS)...IC M5218AP
IC501	8-759-040-53	IC MC14053BCP
IC502	8-759-917-42	IC IR2E31A
IC551	8-759-040-53	IC MC14053BCP
IC552	8-759-917-42	IC IR2E31A
IC601	8-759-208-08	IC TC4052BPHB
IC602	8-752-033-61	IC CXA1198AP
IC603	8-752-031-67	IC CXA1100P
IC604	8-759-634-50	IC M5218AL
IC701	8-759-635-20	IC M50964-225SP
IC901	8-759-604-86	IC M5F7807
IC902	8-759-604-90	IC M5F7907
IC903	8-759-604-29	IC M5F7805
IC904	8-759-604-33	(UK,E2)...IC M5F7812
L41	1-410-780-11	INDUCTOR 27MMH
L61	1-410-780-11	INDUCTOR 27MMH
L601	1-410-521-11	INDUCTOR 100UH
L602	1-410-521-11	INDUCTOR 100UH
M1	X-3343-447-1	(DECK A)...MOTOR ASSY
M2	X-3343-447-1	(DECK B)...MOTOR ASSY
PM1	1-454-456-11	(DECK A)...SOLENOID, PLUNGER
PM2	1-454-456-11	(DECK B)...SOLENOID, PLUNGER
Q11A	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q11B	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q12A	8-719-939-23	PHOTO SENSOR GP2S09-C
Q12B	8-719-939-23	PHOTO SENSOR GP2S09-C
Q81	8-729-111-29	TRANSISTOR 2SD1616A-K
Q82	8-729-194-57	TRANSISTOR 2SC945-P
Q83	8-729-194-57	TRANSISTOR 2SC945-P
Q132	8-729-620-05	TRANSISTOR 2SC2603-EF
Q133	8-729-141-26	TRANSISTOR 2SC3622A-LK
Q180	8-729-140-84	TRANSISTOR 2SC1841-PAFAEA
Q190	8-729-900-63	TRANSISTOR DTA124ES
Q232	8-729-620-05	TRANSISTOR 2SC2603-EF
Q233	8-729-141-26	TRANSISTOR 2SC3622A-LK
Q280	8-729-140-84	TRANSISTOR 2SC1841-PAFAEA
Q301	8-729-620-05	TRANSISTOR 2SC2603-EF
Q302	8-729-620-05	TRANSISTOR 2SC2603-EF
Q303	8-729-900-80	TRANSISTOR DTC114ES
Q305	8-729-620-05	TRANSISTOR 2SC2603-EF
Q306	8-729-900-65	TRANSISTOR DTA114ES
Q307	8-729-900-65	TRANSISTOR DTA114ES
Q308	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q501	8-729-620-05	TRANSISTOR 2SC2603-EF
Q502	8-729-620-05	TRANSISTOR 2SC2603-EF
Q504	8-729-900-80	(E,EA,AUS)...TRANSISTOR DTC114ES
Q551	8-729-620-05	TRANSISTOR 2SC2603-EF
Q552	8-729-620-05	TRANSISTOR 2SC2603-EF
Q554	8-729-900-80	(E,EA,AUS)...TRANSISTOR DTC114ES
Q601	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q701	8-729-900-61	TRANSISTOR DTA114ES
Q702	8-729-801-93	TRANSISTOR 2SD1387
Q703	8-729-801-84	TRANSISTOR 2SB1013-4
Q704	8-729-900-61	TRANSISTOR DTA114ES
Q705	8-729-801-93	TRANSISTOR 2SD1387
Q706	8-729-801-84	TRANSISTOR 2SB1013-4
Q707	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q708	8-729-118-01	TRANSISTOR 2SB1116
Q709	8-729-900-61	TRANSISTOR DTA114ES
Q710	8-729-620-05	TRANSISTOR 2SC2603-EF
Q711	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q712	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q713	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q714	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q715	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q716	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q717	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q718	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q719	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q720	8-729-900-61	TRANSISTOR DTA114ES
Q722	8-729-900-61	(E,EA,AUS)...TRANSISTOR DTA114ES
Q901	8-729-804-68	(E,EA,AUS)...TRANSISTOR 2SB1133-R
R11	1-247-834-11	CARBON 1.3K 5% 1/4W
R12	1-249-414-11	CARBON 560 5% 1/4W
R13	1-247-818-11	CARBON 300 5% 1/4W
R14A	1-249-408-11	CARBON 180 5% 1/4W
R14B	1-249-408-11	CARBON 180 5% 1/4W
R17A	1-249-437-11	CARBON 47K 5% 1/4W
R17B	1-249-437-11	CARBON 47K 5% 1/4W
R18A	1-249-437-11	CARBON 47K 5% 1/4W
R18B	1-249-437-11	CARBON 47K 5% 1/4W
R41A	1-247-881-00	CARBON 120K 5% 1/4W
R41B	1-247-881-00	CARBON 120K 5% 1/4W
R42A	1-249-405-11	CARBON 100 5% 1/4W
R42B	1-249-405-11	CARBON 100 5% 1/4W
R43A	1-247-882-11	CARBON 130K 5% 1/4W
R43B	1-247-882-11	CARBON 130K 5% 1/4W
R44A	1-249-426-11	CARBON 5.6K 5% 1/4W
R44B	1-249-426-11	CARBON 5.6K 5% 1/4W
R45	1-249-430-11	CARBON 12K 5% 1/4W
R61A	1-247-881-00	CARBON 120K 5% 1/4W
R61B	1-247-881-00	CARBON 120K 5% 1/4W
R62A	1-249-405-11	CARBON 100 5% 1/4W
R62B	1-249-405-11	CARBON 100 5% 1/4W
R63A	1-247-882-11	CARBON 130K 5% 1/4W
R63B	1-247-882-11	CARBON 130K 5% 1/4W

Ref.No.	Part No.	Description				
R64A	1-249-426-11	CARBON	5.6K	5%	1/4W	
R64B	1-249-426-11	CARBON	5.6K	5%	1/4W	
R65	1-249-430-11	CARBON	12K	5%	1/4W	
R81A	1-249-409-11	CARBON	220	5%	1/4W	
R81B	1-249-409-11	CARBON	220	5%	1/4W	
R82A	1-249-409-11	CARBON	220	5%	1/4W	
R82B	1-249-409-11	CARBON	220	5%	1/4W	
R83	1-249-429-11	CARBON	10K	5%	1/4W	
R84	⚠1-212-853-00	FUSIBLE	6.8	5%	1/4W	F
R85	1-249-434-11	CARBON	27K	5%	1/4W	
R86	1-249-434-11	CARBON	27K	5%	1/4W	
R101	1-249-417-11	CARBON	1K	5%	1/4W	
R102	1-249-441-11	CARBON	100K	5%	1/4W	
R103	1-249-441-11	CARBON	100K	5%	1/4W	
R106	1-249-437-11	CARBON	47K	5%	1/4W	
R107	1-247-897-11	CARBON	560K	5%	1/4W	
R108	1-249-416-11	CARBON	820	5%	1/4W	
R109	1-249-409-11	CARBON	220	5%	1/4W	
R110	1-249-441-11	CARBON	100K	5%	1/4W	
R111	1-249-429-11	CARBON	10K	5%	1/4W	
R112	1-247-868-11	CARBON	36K	5%	1/4W	
R113	1-249-417-11	CARBON	1K	5%	1/4W	
R114	1-247-897-11	CARBON	560K	5%	1/4W	
R115	1-249-417-11	CARBON	1K	5%	1/4W	
R116	1-247-897-11	CARBON	560K	5%	1/4W	
R131	1-249-437-11	CARBON	47K	5%	1/4W	
R132	1-249-437-11	CARBON	47K	5%	1/4W	
R133	1-249-437-11	CARBON	47K	5%	1/4W	
R134	1-249-441-11	CARBON	100K	5%	1/4W	
R135	1-249-424-11	CARBON	3.9K	5%	1/4W	
R136	1-249-429-11	CARBON	10K	5%	1/4W	
R137	1-249-426-11	CARBON	5.6K	5%	1/4W	
R138	1-249-422-11	CARBON	2.7K	5%	1/4W	
R139	1-249-422-11	CARBON	2.7K	5%	1/4W	
R140	1-249-441-11	CARBON	100K	5%	1/4W	
R141	1-249-427-11	CARBON	6.8K	5%	1/4W	
R142	1-249-412-11	CARBON	390	5%	1/4W	
R143	1-249-425-11	CARBON	4.7K	5%	1/4W	
R145	1-249-421-11	CARBON	2.2K	5%	1/4W	
R146	1-249-441-11	(E,EA,AUS)...CARBON	100K	5%	1/4W	
R147	1-249-429-11	CARBON	10K	5%	1/4W	
R148	1-249-441-11	CARBON	100K	5%	1/4W	
R149	1-249-425-11	CARBON	4.7K	5%	1/4W	
R171	1-249-417-11	CARBON	1K	5%	1/4W	
R172	1-249-438-11	CARBON	56K	5%	1/4W	
R173	1-249-414-11	CARBON	560	5%	1/4W	
R174	1-249-438-11	CARBON	56K	5%	1/4W	
R175	1-247-756-11	(AEP,UK,WG,IT)...CARBON	2.2K	5%	1/2W	
R175	1-247-758-11	(E,EA,AUS).......CARBON	3.3K	5%	1/2W	
R176	1-247-756-11	(AEP,UK,WG,IT)...CARBON	2.2K	5%	1/2W	
R176	1-247-758-11	(E,EA,AUS).......CARBON	3.3K	5%	1/2W	
R177	⚠1-212-881-11	FUSIBLE	100	5%	1/4W	F
R178	1-247-752-11	CARBON	1K	5%	1/2W	
R179	1-247-752-11	CARBON	1K	5%	1/2W	
R180	1-217-156-00	METAL PLATE	0.22	10%	5W	
R181	1-249-417-11	CARBON	1K	5%	1/4W	
R182	1-249-431-11	CARBON	15K	5%	1/4W	
R183	1-249-441-11	CARBON	100K	5%	1/4W	
R184	1-247-727-11	CARBON	10	5%	1/2W	
R186	1-249-437-11	CARBON	47K	5%	1/4W	
R187	1-247-745-11	CARBON	330	5%	1/2W	
R190	⚠1-216-431-11	(AEP,UK,WG,IT)..METAL OXIDE	560	5%	1W	F
R190	⚠1-216-432-11	(E,EA,AUS)......METAL OXIDE	820	5%	1W	F
R191	⚠1-249-486-11	(AEP,UK,WG,IT)...CARBON	12K	5%	1/2W	
R191	⚠1-249-487-11	(E,EA,AUS).......CARBON	15K	5%	1/2W	
R192	1-249-436-11	CARBON	39K	5%	1/4W	
R193	1-249-441-11	CARBON	100K	5%	1/4W	
R194	1-249-429-11	CARBON	10K	5%	1/4W	
R201	1-249-417-11	CARBON	1K	5%	1/4W	
R202	1-249-441-11	CARBON	100K	5%	1/4W	
R203	1-249-441-11	CARBON	100K	5%	1/4W	
R206	1-249-437-11	CARBON	47K	5%	1/4W	
R207	1-247-897-11	CARBON	560K	5%	1/4W	
R208	1-249-416-11	CARBON	820	5%	1/4W	
R209	1-249-409-11	CARBON	220	5%	1/4W	
R210	1-249-441-11	CARBON	100K	5%	1/4W	
R211	1-249-429-11	CARBON	10K	5%	1/4W	
R212	1-247-868-11	CARBON	36K	5%	1/4W	
R213	1-249-417-11	CARBON	1K	5%	1/4W	
R214	1-247-897-11	CARBON	560K	5%	1/4W	
R215	1-249-417-11	CARBON	1K	5%	1/4W	
R216	1-247-897-11	CARBON	560K	5%	1/4W	
R231	1-249-437-11	CARBON	47K	5%	1/4W	
R232	1-249-437-11	CARBON	47K	5%	1/4W	
R233	1-249-437-11	CARBON	47K	5%	1/4W	
R234	1-249-441-11	CARBON	100K	5%	1/4W	
R235	1-249-424-11	CARBON	3.9K	5%	1/4W	
R236	1-249-429-11	CARBON	10K	5%	1/4W	
R237	1-249-426-11	CARBON	5.6K	5%	1/4W	
R238	1-249-422-11	CARBON	2.7K	5%	1/4W	
R239	1-249-422-11	CARBON	2.7K	5%	1/4W	
R240	1-249-441-11	CARBON	100K	5%	1/4W	
R241	1-249-427-11	CARBON	6.8K	5%	1/4W	
R242	1-249-412-11	CARBON	390	5%	1/4W	
R243	1-249-425-11	CARBON	4.7K	5%	1/4W	
R245	1-249-421-11	CARBON	2.2K	5%	1/4W	
R246	1-249-441-11	(E,EA,AUS)...CARBON	100K	5%	1/4W	
R247	1-249-429-11	CARBON	10K	5%	1/4W	
R248	1-249-441-11	CARBON	100K	5%	1/4W	
R249	1-249-425-11	CARBON	4.7K	5%	1/4W	
R271	1-249-417-11	CARBON	1K	5%	1/4W	
R272	1-249-438-11	CARBON	56K	5%	1/4W	
R273	1-249-414-11	CARBON	560	5%	1/4W	
R274	1-249-438-11	CARBON	56K	5%	1/4W	
R275	1-247-756-11	(AEP,UK,WG,IT)...CARBON	2.2K	5%	1/2W	
R275	1-247-758-11	(E,EA,AUS).......CARBON	3.3K	5%	1/2W	
R276	1-247-756-11	(AEP,UK,WG,IT)...CARBON	2.2K	5%	1/2W	
R276	1-247-758-11	(E,EA,AUS).......CARBON	3.3K	5%	1/2W	
R277	⚠1-212-881-11	FUSIBLE	100	5%	1/4W	F
R280	1-217-156-00	METAL PLATE	0.22	10%	5W	
R281	1-249-417-11	CARBON	1K	5%	1/4W	

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref.No.	Part No.	Description
R282	1-249-431-11	CARBON 15K 5% 1/4W
R283	1-249-441-11	CARBON 100K 5% 1/4W
R284	1-247-727-11	CARBON 10 5% 1/2W
R286	1-249-438-11	CARBON 56K 5% 1/4W
R287	1-247-745-11	CARBON 330 5% 1/2W
R301	1-249-418-11	CARBON 1.2K 5% 1/4W
R302	1-249-429-11	CARBON 10K 5% 1/4W
R303	1-249-441-11	CARBON 100K 5% 1/4W
R304	1-249-429-11	CARBON 10K 5% 1/4W
R305	1-249-429-11	CARBON 10K 5% 1/4W
R307	1-249-433-11	CARBON 22K 5% 1/4W
R308	1-249-433-11	CARBON 22K 5% 1/4W
R309	1-249-433-11	CARBON 22K 5% 1/4W
R310	1-249-433-11	CARBON 22K 5% 1/4W
R311	1-249-409-11	CARBON 220 5% 1/4W
R312	1-249-409-11	CARBON 220 5% 1/4W
R314	1-249-411-11	CARBON 330 5% 1/4W
R315	1-249-417-11	CARBON 1K 5% 1/4W
R316	1-249-417-11	CARBON 1K 5% 1/4W
R319	1-249-429-11	(E,EA,AUS)...CARBON 10K 5% 1/4W
R320	1-249-437-11	CARBON 47K 5% 1/4W
R321	1-249-429-11	CARBON 10K 5% 1/4W
R322	1-249-409-11	CARBON 220 5% 1/4W
R323	1-249-409-11	CARBON 220 5% 1/4W
R324	1-249-409-11	(E,EA,AUS)...CARBON 220 5% 1/4W
R325	1-249-409-11	(E,EA,AUS)...CARBON 220 5% 1/4W
R329	1-249-429-11	CARBON 10K 5% 1/4W
R330	1-249-429-11	CARBON 10K 5% 1/4W
R331	1-249-429-11	CARBON 10K 5% 1/4W
R401	1-249-417-11	CARBON 1K 5% 1/4W
R402	1-249-429-11	(E,EA,AUS).......CARBON 10K 5% 1/4W
R402	1-249-441-11	(AEP,UK,WG,IT)...CARBON 100K 5% 1/4W
R403	1-249-441-11	CARBON 100K 5% 1/4W
R404	1-249-410-11	CARBON 270 5% 1/4W
R405	1-249-429-11	(AEP,UK,WG,IT)...CARBON 10K 5% 1/4W
R405	1-249-441-11	(E,EA,AUS).......CARBON 100K 5% 1/4W
R406	1-249-416-11	CARBON 820 5% 1/4W
R451	1-249-432-11	(E,EA,AUS)...CARBON 18K 5% 1/4W
R452	1-249-441-11	(E,EA,AUS)...CARBON 100K 5% 1/4W
R453	1-249-441-11	(E,EA,AUS)...CARBON 100K 5% 1/4W
R454	1-247-903-11	(E,EA,AUS)...CARBON 1M 5% 1/4W
R470	1-249-417-11	(E,EA,AUS)...CARBON 1K 5% 1/4W
R471	1-247-885-00	(E,EA,AUS)...CARBON 180K 5% 1/4W
R472	1-249-429-11	(E,EA,AUS)...CARBON 10K 5% 1/4W
R473	1-249-405-11	(E,EA,AUS)...CARBON 100 5% 1/4W
R474	1-249-412-11	(E,EA,AUS)...CARBON 390 5% 1/4W
R475	1-249-423-11	(E,EA,AUS)...CARBON 3.3K 5% 1/4W
R476	1-249-439-11	(E,EA,AUS)...CARBON 68K 5% 1/4W
R477	1-247-899-11	(E,EA,AUS)...CARBON 680K 5% 1/4W
R478	1-247-903-11	(E,EA,AUS)...CARBON 1M 5% 1/4W
R480	1-249-441-11	(E,EA,AUS)...CARBON 100K 5% 1/4W
R481	1-249-439-11	(E,EA,AUS)...CARBON 68K 5% 1/4W
R482	1-249-426-11	(E,EA,AUS)...CARBON 5.6K 5% 1/4W
R483	1-249-413-11	(E,EA,AUS)...CARBON 470 5% 1/4W
R484	1-247-901-11	(E,EA,AUS)...CARBON 820K 5% 1/4W
R485	1-249-440-11	(E,EA,AUS)...CARBON 82K 5% 1/4W
R486	1-249-423-11	(E,EA,AUS)...CARBON 3.3K 5% 1/4W
R487	1-249-441-11	(E,EA,AUS)...CARBON 100K 5% 1/4W
R488	1-249-441-11	(E,EA,AUS)...CARBON 100K 5% 1/4W
R489	1-247-887-00	(E,EA,AUS)...CARBON 220K 5% 1/4W
R490	1-249-433-11	(E,EA,AUS)...CARBON 22K 5% 1/4W
R491	1-249-417-11	(E,EA,AUS)...CARBON 1K 5% 1/4W
R492	1-247-903-11	(E,EA,AUS)...CARBON 1M 5% 1/4W
R493	1-249-441-11	(E,EA,AUS)...CARBON 100K 5% 1/4W
R494	1-249-423-11	(E,EA,AUS)...CARBON 3.3K 5% 1/4W
R495	1-249-441-11	(E,EA,AUS)...CARBON 100K 5% 1/4W
R496	1-249-441-11	(E,EA,AUS)...CARBON 100K 5% 1/4W
R497	1-249-417-11	(E,EA,AUS)...CARBON 1K 5% 1/4W
R498	1-249-441-11	(E,EA,AUS)...CARBON 100K 5% 1/4W
R499	1-249-409-11	(E,EA,AUS)...CARBON 220 5% 1/4W
R501	1-249-420-11	CARBON 1.8K 5% 1/4W
R502	1-249-437-11	CARBON 47K 5% 1/4W
R503	1-249-422-11	CARBON 2.7K 5% 1/4W
R504	1-249-441-11	CARBON 100K 5% 1/4W
R506	1-249-408-11	(E,EA,AUS)...CARBON 180 5% 1/4W
R507	1-247-850-11	(E,EA,AUS).......CARBON 6.2K 5% 1/4W
R507	1-249-419-11	(AEP,UK,WG,IT)...CARBON 1.5K 5% 1/4W
R508	1-249-421-11	CARBON 2.2K 5% 1/4W
R509	1-249-425-11	CARBON 4.7K 5% 1/4W
R510	1-249-429-11	CARBON 10K 5% 1/4W
R511	1-249-411-11	CARBON 330 5% 1/4W
R512	1-249-426-11	CARBON 5.6K 5% 1/4W
R513	1-249-425-11	CARBON 4.7K 5% 1/4W
R514	1-249-429-11	CARBON 10K 5% 1/4W
R515	1-249-421-11	CARBON 2.2K 5% 1/4W
R516	1-249-440-11	CARBON 82K 5% 1/4W
R520	1-249-437-11	CARBON 47K 5% 1/4W
R521	1-247-854-11	CARBON 9.1K 5% 1/4W
R522	1-249-407-11	CARBON 150 5% 1/4W
R551	1-249-420-11	CARBON 1.8K 5% 1/4W
R552	1-249-437-11	CARBON 47K 5% 1/4W
R553	1-249-422-11	CARBON 2.7K 5% 1/4W
R554	1-249-441-11	CARBON 100K 5% 1/4W
R556	1-249-408-11	(E,EA,AUS)...CARBON 180 5% 1/4W
R557	1-247-850-11	(E,EA,AUS).......CARBON 6.2K 5% 1/4W
R557	1-249-419-11	(AEP,UK,WG,IT)...CARBON 1.5K 5% 1/4W
R558	1-249-421-11	CARBON 2.2K 5% 1/4W
R559	1-249-425-11	CARBON 4.7K 5% 1/4W
R560	1-249-429-11	CARBON 10K 5% 1/4W
R561	1-249-411-11	CARBON 330 5% 1/4W
R562	1-249-426-11	CARBON 5.6K 5% 1/4W
R563	1-249-425-11	CARBON 4.7K 5% 1/4W
R564	1-249-429-11	CARBON 10K 5% 1/4W
R565	1-249-421-11	CARBON 2.2K 5% 1/4W
R566	1-249-440-11	CARBON 82K 5% 1/4W
R570	1-249-437-11	CARBON 47K 5% 1/4W
R571	1-247-854-11	CARBON 9.1K 5% 1/4W
R601	1-249-433-11	CARBON 22K 5% 1/4W
R602	1-249-433-11	CARBON 22K 5% 1/4W
R603	1-249-433-11	CARBON 22K 5% 1/4W
R604	1-215-460-00	METAL 43K 1% 1/6W

Ref.No.	Part No.	Description			
R605	1-249-437-11	CARBON	47K	5%	1/4W
R606	1-249-437-11	CARBON	47K	5%	1/4W
R609	1-247-864-11	CARBON	24K	5%	1/4W
R611	1-249-437-11	CARBON	47K	5%	1/4W
R612	1-249-435-11	CARBON	33K	5%	1/4W
R613	1-247-868-11	CARBON	36K	5%	1/4W
R614	1-247-878-00	CARBON	91K	5%	1/4W
R615	1-247-881-00	CARBON	120K	5%	1/4W
R616	1-249-437-11	CARBON	47K	5%	1/4W
R617	1-247-862-11	CARBON	20K	5%	1/4W
R618	1-247-868-11	CARBON	36K	5%	1/4W
R619	1-249-436-11	CARBON	39K	5%	1/4W
R620	1-247-876-11	CARBON	75K	5%	1/4W
R621	1-247-868-11	CARBON	36K	5%	1/4W
R622	1-247-878-00	CARBON	91K	5%	1/4W
R623	1-247-876-11	CARBON	75K	5%	1/4W
R624	1-249-437-11	CARBON	47K	5%	1/4W
R625	1-247-866-11	CARBON	30K	5%	1/4W
R626	1-247-878-00	CARBON	91K	5%	1/4W
R627	1-247-881-00	CARBON	120K	5%	1/4W
R628	1-247-876-11	CARBON	75K	5%	1/4W
R629	1-247-868-11	CARBON	36K	5%	1/4W
R630	1-249-438-11	CARBON	56K	5%	1/4W
R631	1-249-433-11	CARBON	22K	5%	1/4W
R632	1-249-434-11	CARBON	27K	5%	1/4W
R633	1-249-440-11	CARBON	82K	5%	1/4W
R634	1-249-440-11	CARBON	82K	5%	1/4W
R635	1-249-429-11	CARBON	10K	5%	1/4W
R636	1-249-429-11	CARBON	10K	5%	1/4W
R637	1-249-425-11	CARBON	4.7K	5%	1/4W
R638	1-247-854-11	CARBON	9.1K	5%	1/4W
R639	1-249-433-11	CARBON	22K	5%	1/4W
R640	1-249-433-11	CARBON	22K	5%	1/4W
R641	1-249-405-11	CARBON	100	5%	1/4W
R642	1-249-405-11	CARBON	100	5%	1/4W
R703	1-249-421-11	CARBON	2.2K	5%	1/4W
R704	1-249-429-11	CARBON	10K	5%	1/4W
R705	1-249-417-11	CARBON	1K	5%	1/4W
R706	1-249-429-11	CARBON	10K	5%	1/4W
R707	1-249-437-11	CARBON	47K	5%	1/4W
R708	1-249-433-11	CARBON	22K	5%	1/4W
R709	1-249-429-11	CARBON	10K	5%	1/4W
R712	1-249-421-11	CARBON	2.2K	5%	1/4W
R713	1-249-429-11	CARBON	10K	5%	1/4W
R714	1-249-417-11	CARBON	1K	5%	1/4W
R715	1-249-429-11	CARBON	10K	5%	1/4W
R716	1-249-437-11	CARBON	47K	5%	1/4W
R717	1-249-417-11	CARBON	1K	5%	1/4W
R718	1-249-417-11	CARBON	1K	5%	1/4W
R719	1-249-425-11	CARBON	4.7K	5%	1/4W
R720	1-249-425-11	CARBON	4.7K	5%	1/4W
R723	1-247-895-00	CARBON	470K	5%	1/4W
R724	1-247-895-00	CARBON	470K	5%	1/4W
R727	1-249-429-11	CARBON	10K	5%	1/4W
R728	1-247-903-00	CARBON	1M	5%	1/4W
R729	1-249-429-11	CARBON	10K	5%	1/4W
R730	1-249-423-11	CARBON	3.3K	5%	1/4W

Ref.No.	Part No.	Description			
R731	1-249-429-11	CARBON	10K	5%	1/4W
R732	1-249-421-11	CARBON	2.2K	5%	1/4W
R733	1-249-421-11	CARBON	2.2K	5%	1/4W
R734	1-249-421-11	CARBON	2.2K	5%	1/4W
R737	1-249-429-11	CARBON	10K	5%	1/4W
R738	1-249-429-11	(AEP,UK,WG,IT)...CARBON	10K	5%	1/4W
R738	1-249-441-11	(E,EA,AUS).......CARBON	100K	5%	1/4W
R739	1-249-429-11	(AEP,UK,WG,IT)...CARBON	10K	5%	1/4W
R739	1-249-441-11	(E,EA,AUS).......CARBON	100K	5%	1/4W
R740	1-249-409-11	CARBON	220	5%	1/4W
R741	1-249-409-11	CARBON	220	5%	1/4W
R742	1-249-411-11	CARBON	330	5%	1/4W
R743	1-249-411-11	CARBON	330	5%	1/4W
R744	1-249-411-11	CARBON	330	5%	1/4W
R745	1-249-411-11	CARBON	330	5%	1/4W
R746	1-249-411-11	CARBON	330	5%	1/4W
R747	1-249-411-11	CARBON	330	5%	1/4W
R748	1-249-411-11	CARBON	330	5%	1/4W
R749	1-249-411-11	CARBON	330	5%	1/4W
R750	1-249-412-11	CARBON	390	5%	1/4W
R751	1-249-411-11	CARBON	330	5%	1/4W
R752	1-249-429-11	CARBON	10K	5%	1/4W
R753	1-249-429-11	CARBON	10K	5%	1/4W
R774	1-249-424-11	CARBON	3.9K	5%	1/4W
R775	1-249-420-11	CARBON	1.8K	5%	1/4W
R776	1-249-417-11	CARBON	1K	5%	1/4W
R777	1-247-832-11	CARBON	1.1K	5%	1/4W
R778	1-249-411-11	CARBON	330	5%	1/4W
R779	1-249-412-11	CARBON	390	5%	1/4W
R780	1-249-407-11	CARBON	150	5%	1/4W
R781	1-249-409-11	CARBON	220	5%	1/4W
R782	1-249-411-11	CARBON	330	5%	1/4W
R783	1-249-413-11	CARBON	470	5%	1/4W
R784	1-249-415-11	CARBON	680	5%	1/4W
R785	1-249-417-11	CARBON	1K	5%	1/4W
R786	1-249-426-11	CARBON	5.6K	5%	1/4W
R787	1-249-430-11	CARBON	12K	5%	1/4W
R801	1-247-417-11	(WG,IT)...CARBON	1K	5%	1/4W
R802	1-247-417-11	(WG,IT)...CARBON	1K	5%	1/4W
R821	1-247-727-11	(WG,IT)...CARBON	10	5%	1/4W
R822	1-247-727-11	(WG,IT)...CARBON	10	5%	1/4W
R901	1-247-864-11	(AEP,UK,WG,IT)...CARBON	24K	5%	1/4W
R901	1-249-434-11	(E,EA,AUS).......CARBON	27K	5%	1/4W
R903	1-249-422-11	(E,EA,AUS)...CARBON	2.7K	5%	1/4W
R904	1-249-426-11	(E,EA,AUS)...CARBON	5.6K	5%	1/4W
R905	1-249-429-11	(E,EA,AUS)...CARBON	10K	5%	1/4W
RV41A	1-228-989-00	RES, ADJ, CARBON 470			
RV41B	1-228-989-00	RES, ADJ, CARBON 470			
RV42	1-230-499-11	RES, ADJ, CARBON 100K			
RV61A	1-228-989-00	RES, ADJ, CARBON 470			
RV61B	1-228-989-00	RES, ADJ, CARBON 470			
RV62	1-230-499-11	RES, ADJ, CARBON 100K			

Ref.No.	Part No.	Description
RV131	1-241-011-11	(E,EA,AUS)...RES, VAR SLIDE 100K (L 100Hz)(INCLUDING LED)
RV131	1-241-012-11	(AEP,UK,WG,IT)...RES, VAR, SLIDE 100K (L 100Hz)
RV132	1-241-011-11	(E,EA,AUS)...RES, VAR SLIDE 100K (L 400Hz)(INCLUDING LED)
RV132	1-241-012-11	(AEP,UK,WG,IT)...RES, VAR, SLIDE 100K (L 400Hz)
RV133	1-241-011-11	(E,EA,AUS)...RES, VAR SLIDE 100K (L 1kHz) (INCLUDING LED)
RV133	1-241-012-11	(AEP,UK,WG,IT)...RES, VAR, SLIDE 100K (L 1kHz)
RV134	1-241-011-11	(E,EA,AUS)...RES, VAR SLIDE 100K (L 4kHz) (INCLUDING LED)
RV134	1-241-012-11	(AEP,UK,WG,IT)...RES, VAR, SLIDE 100K (L 4kHz)
RV135	1-241-011-11	(E,EA,AUS)...RES, VAR, SLIDE 100K (L 12kHz)(INCLUDING LED)
RV135	1-241-012-11	(AEP,UK,WG,IT)...RES, VAR, SLIDE 100K (L 12kHz)
RV149	1-241-014-11	RES, VAR, CARBON 20K/20K (DBFB (SAT) LEVEL)
RV150	1-241-014-11	RES, VAR, CARBON 20K/20K (SURROUND LEVEL)
RV151	1-241-016-11	RES, VAR, CARBON 100K (BALANCE)
RV152	1-241-013-11	RES, VAR, CARBON 100K/100K (VOLUME)
RV231	1-241-011-11	(E,EA,AUS)...RES, VAR SLIDE 100K (R 100Hz)(INCLUDING LED)
RV231	1-241-012-11	(AEP,UK,WG,IT)...RES, VAR, SLIDE 100K (R 100Hz)
RV232	1-241-011-11	(E,EA,AUS)...RES, VAR SLIDE 100K (R 400Hz)(INCLUDING LED)
RV232	1-241-012-11	(AEP,UK,WG,IT)...RES, VAR, SLIDE 100K (R 400Hz)
RV233	1-241-011-11	(E,EA,AUS)...RES, VAR SLIDE 100K (R 1kHz) (INCLUDING LED)
RV233	1-241-012-11	(AEP,UK,WG,IT)...RES, VAR, SLIDE 100K (R 1kHz)
RV234	1-241-011-11	(E,EA,AUS)...RES, VAR SLIDE 100K (R 4kHz) (INCLUDING LED)
RV234	1-241-012-11	(AEP,UK,WG,IT)...RES, VAR, SLIDE 100K (R 4kHz)
RV235	1-241-011-11	(E,EA,AUS)...RES, VAR SLIDE 100K (R 12kHz)(INCLUDING LED)
RV235	1-241-012-11	(AEP,UK,WG,IT)...RES, VAR, SLIDE 100K (R 12kHz)
RV401	1-241-015-11	RES, VAR, CARBON 50K (MIC LEVEL)
RV501	1-228-994-00	RES, ADJ, CARBON 10K
RV551	1-228-994-00	RES, ADJ, CARBON 10K
RV601	1-238-534-11	RES, VAR, CARBON 20K/20K (REC LEVEL)
RY81	1-515-614-11	RELAY
RY190	1-515-533-11	RELAY
S11A	1-571-281-21	SWITCH, LEAF (HALF)
S11B	1-571-281-21	SWITCH, LEAF (HALF)
S12	1-571-281-21	SWITCH, LEAF (REC A)
S13	1-571-281-21	SWITCH, LEAF (REC B)
S14A	1-571-281-21	SWITCH, LEAF (CrO2)
S14B	1-571-281-21	SWITCH, LEAF (CrO2)
S101	1-572-334-11	SWITCH, PUSH (2 KEY)(EQ ON/EQ REC)
S301	1-554-303-21	SWITCH, KEY BOARD (PHONO)
S302	1-554-303-21	SWITCH, KEY BOARD (TUNER)
S303	1-554-303-21	SWITCH, KEY BOARD (CD)
S304	1-554-303-21	SWITCH, KEY BOARD (TAPE)
S305	1-554-303-21	SWITCH, KEY BOARD (AUX)
S306	1-554-303-21	SWITCH, KEY BOARD (SURROUND)
S307	1-554-303-21	SWITCH, KEY BOARD (DBFB (SAT))
S701	1-554-303-21	SWITCH, KEY BOARD (HIGH SPEED)
S702	1-554-303-21	SWITCH, KEY BOARD (NORMAL SPEED)
S703	1-554-303-21	SWITCH, KEY BOARD (A FWD)
S704	1-554-303-21	SWITCH, KEY BOARD (A REV)
S705	1-554-303-21	SWITCH, KEY BOARD (A FF)
S706	1-554-303-21	SWITCH, KEY BOARD (A REW)
S707	1-554-303-21	SWITCH, KEY BOARD (A STOP)
S708	1-554-303-21	SWITCH, KEY BOARD (B FWD)
S709	1-554-303-21	SWITCH, KEY BOARD (B REV)
S710	1-554-303-21	SWITCH, KEY BOARD (B FF)
S711	1-554-303-21	SWITCH, KEY BOARD (B REW)
S712	1-554-303-21	SWITCH, KEY BOARD (B STOP)
S713	1-554-303-21	SWITCH, KEY BOARD (B REC)
S714	1-554-303-21	SWITCH, KEY BOARD (B PAUSE)
S715	1-554-303-21	SWITCH, KEY BOARD (B REC MUTE)
S716	1-570-849-11	SWITCH, SLIDE (DOLBY NR)
S717	1-570-837-11	SWITCH, SLIDE (DIRECTION)
S920	⚠1-553-318-41	SWITCH, PUSH (AC POWER)(1 KEY)(POWER)
T81	1-433-331-11	TRANSFORMER, BIAS OSCILLATION
T901	⚠1-450-063-11	(AEP,UK,WG,IT)...TRANSFORMER, POWER
T901	⚠1-450-064-11	(E,EA,AUS).......TRANSFORMER, POWER
VS901	⚠1-571-722-11	(E,EA,AUS)...SWITCH, VOLTAGE SELECTION (VOLTAGE)
X313	1-577-101-11	VIBRATOR, CERAMIC 4.19MHz
X701	1-577-358-21	VIBRATOR, CERAMIC 4MHz

ACCESSORY & PACKING MATERIAL

1-465-455-11	REMOTE COMMANDER (RM-S530)
1-501-369-11	(AEP,IT)......ANTENNA
1-501-374-11	(AEP,WG,IT)...ANTENNA, LOOP
1-575-668-11	CORD (WITH CONNECTOR)
3-751-553-11	(AEP).........MANUAL, INSTRUCTION
3-751-553-41	(AEP,WG,IT)...MANUAL, INSTRUCTION
3-707-584-01	COVER, BATTERY (for RM-S530)
*4-914-075-01	(AEP,WG,IT)...CUSHION (SP)
*4-935-383-01	CUSHION
4-921-934-01	SHEET, PROTECTION
*4-937-346-01	(AEP,WG,IT)...INDIVIDUAL CARTON

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

SS-A502

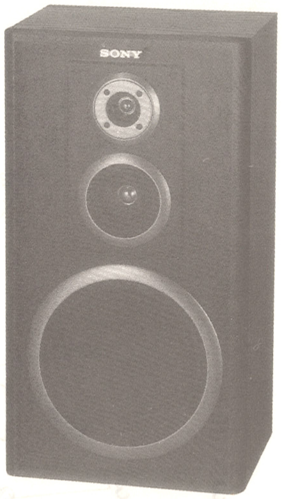
SERVICE MANUAL

AEP Model
UK Model

SPECIFICATIONS

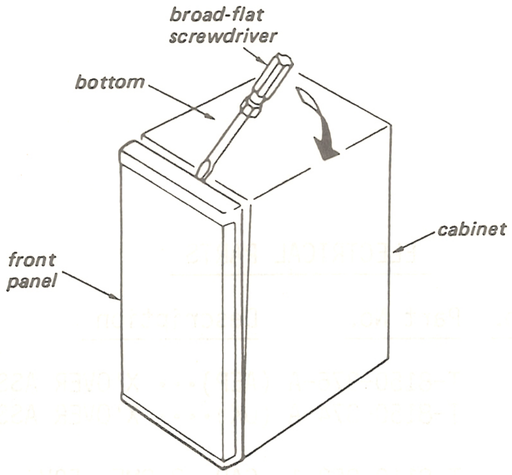
Speaker system	3-way speaker system
Speaker units	Woofer: 16 cm, cone type Midrange: 6 cm, cone type Tweeter: 1.6 cm, dome type
Enclosure type	Acoustic suspension
Nominal impedance	6 ohms
Power handling capacity	Music 120 W
Sensitivity	88 dB (1 W, 1 m), 6.3 W (96 dB, 1 m)
Frequency range	45 Hz to 20,000 Hz
Dimensions	Approx. 250 x 461 x 196 mm (w/h/d)
Weight	Approx. 4.7 kg per speaker, net Approx. 10 kg in shipping carton

Design and specifications subject to change without notice.



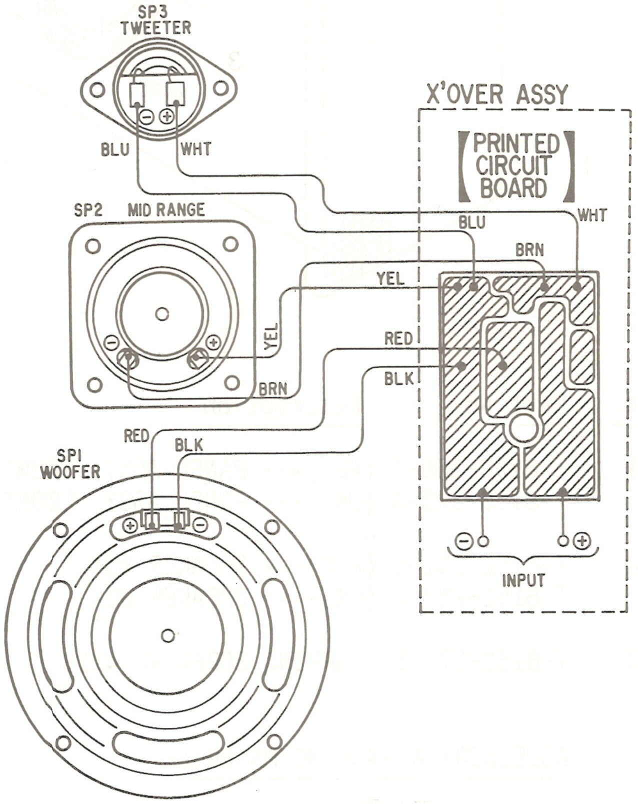
This set is the speaker system in LBT-V502.

1. FRONT PANEL REMOVAL


broad-flat screwdriver
bottom
cabinet
front panel

Note: Be careful not to scratch the cabinet.

2. WIRING DIAGRAM


SP3 TWEETER
⊖ ⊕
BLU
WHT
X'OVER ASSY
PRINTED CIRCUIT BOARD
SP2 MID RANGE
BLU
WHT
BRN
YEL
YEL
RED
BLK
BRN
RED
BLK
SPI WOOFER
⊕ ⊖
⊖ ⊕
INPUT

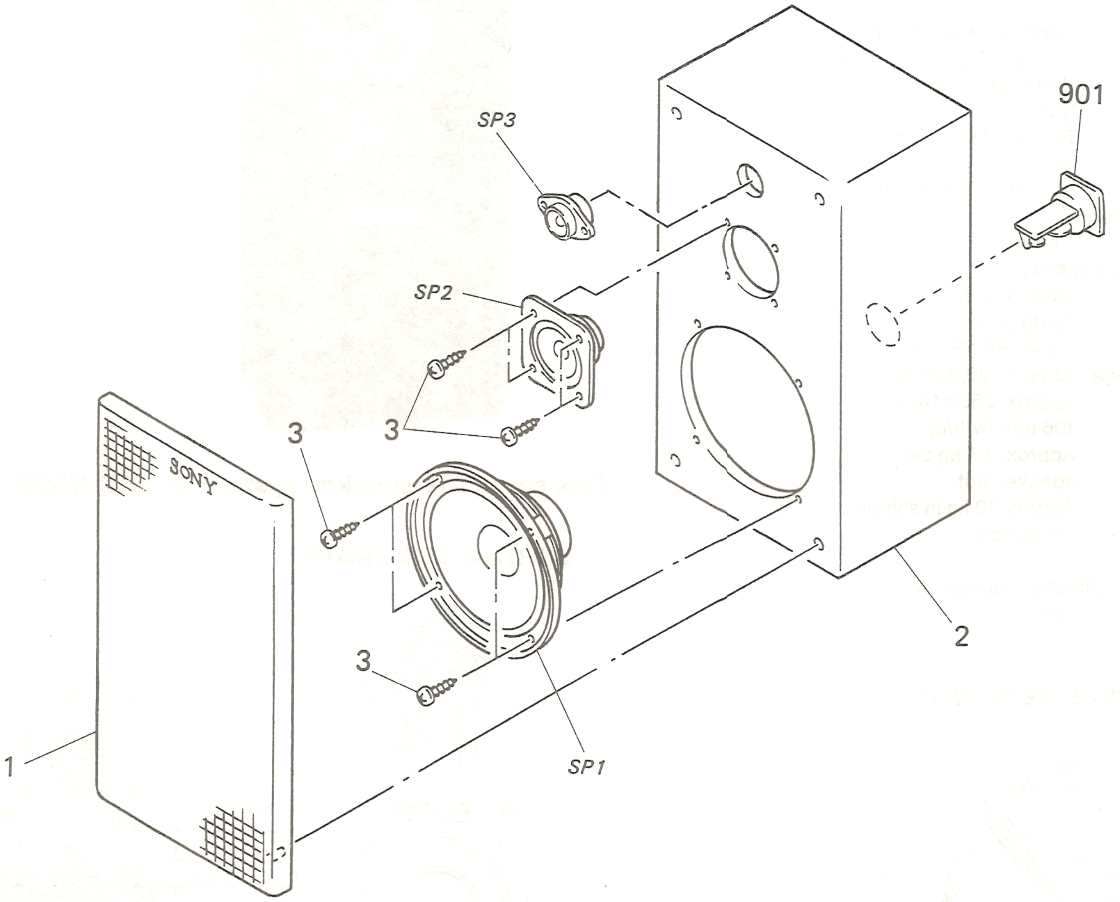
SPEAKER SYSTEM

SONY®

MICROFILM

3. EXPLODED VIEW AND PARTS LIST

NOTE:
- The mechanical parts with no reference number in the exploded views are not supplied.



No.	Part No.	Description
1	T-8150-366-A (AEP)···	PANEL ASSY, FRONT
	T-8150-373-A (UK)····	PANEL ASSY, FRONT
2	T-8151-231-1 (AEP)···	SPEAKER BOX
	T-8151-233-1 (UK)····	SPEAKER BOX
3	T-8150-573-1	TAPPING SCREW +P 4X15

ACCESSORY & PACKING MATERIAL

Part No.	Description
T-8151-236-1 (AEP)···	MANUAL, INSTRUCTION
T-8151-195-1 (UK)····	MANUAL, INSTRUCTION

ELECTRICAL PARTS

Ref.No.	Part No.	Description
901	T-8150-376-A (AEP)···	X'OVER ASSY
	T-8150-374-A (UK)····	X'OVER ASSY
C 1	T-8110-253-1	CAP 2.2MF 50V
SP1	T-8110-443-1	WOOFER
SP2	1-544-046-11	MID RANGE
SP3	1-544-135-21	TWEETER

9-955-829-11

Sony Corporation
Audio Group

English
90D0460-1
Printed in Japan
© 1990. 4
Published by Customer Relations and Service Group

PS-LX40/LX40P/LX43P/LX44P

SERVICE MANUAL

US Model
PS-LX43P

AEP Model
PS-LX40P/LX43P

UK Model
PS-LX40P/LX43P/LX44P

E Model
PS-LX40/LX40P/LX43P

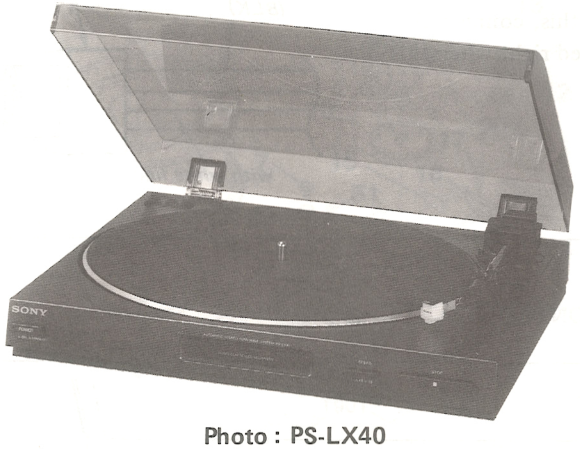


Photo : PS-LX40

SPECIFICATIONS

Turntable

Platter	30 cm
Motor	DC servo motor
Drive system	Belt drive
Speed	33⅓ rpm/45 rpm switchable
Wow and flutter	0.2% (WRMS)
Signal-to-noise ratio	50 dB (DIN-B)
Automatic system	Return, reject

Tonearm

Type	Statically balanced
Pivot-to stylus length	203 mm
Overall arm length	235 mm

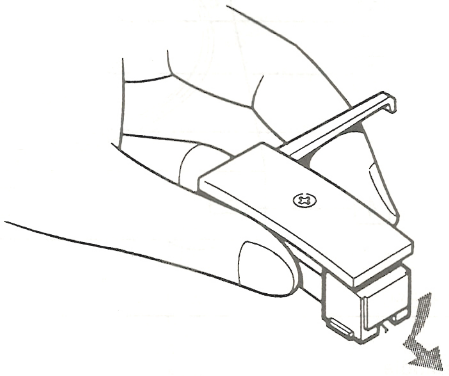
Cartridge

Type	Moving magnet type
Frequency response	20 Hz – 20kHz
Stylus	ND-155G

General

Dimensions	Approx. 355 × 95 × 345 mm (14 × 3¾ × 13⅝ inches)
Weight	PS-LX40 : Approx. 2.5 kg PS-LX40P/LX43P/LX44P : Approx. 2.1 kg (4 lb 11 oz)
Power requirements	PS-LX40 : 110 – 120 V, 220 – 240 V AC adjustable, 50/60 Hz PS-LX40P/LX43P/LX44P : 12V DC. Supplied from STEREO DECK RECEIVER (HST-).
Power consumption	4 W
Accessory supplied	45-rpm adaptor (1)
Optional accessories	Replacement stylus ND-155G

REPLACING THE STYLUS



Replace the stylus after about 400 hours of use because using a worn stylus will damage records.
An ND-155G replacement stylus is available at your Sony dealer.
Be sure to turn the amplifier off before proceeding with replacement.

1 While holding the cartridge, detach the stylus assembly as illustrated.
2 Insert the new stylus into the cartridge.

Design and specifications subject to change without notice.

MICROFILM

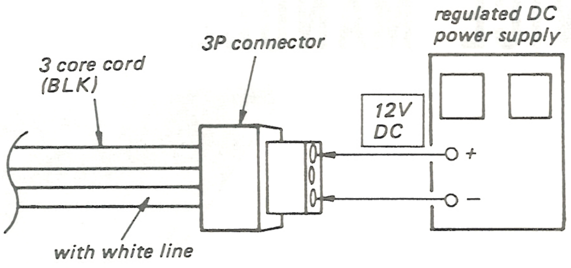
STEREO TURNTABLE SYSTEM

SONY®

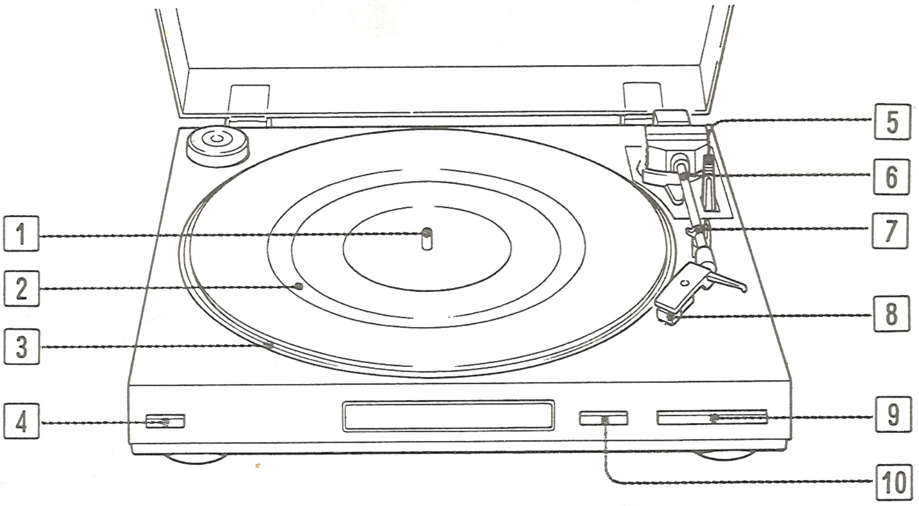
REPAIRING PRECAUTION (PS-LX40P/LX43P/LX44P only)

[To spply B+ voltage]

The power of this unit is fed from HST-D201, D301, D301CD or D501CD. Because of this, connect the regulated power supply as illustrated right when this unit alone operates.

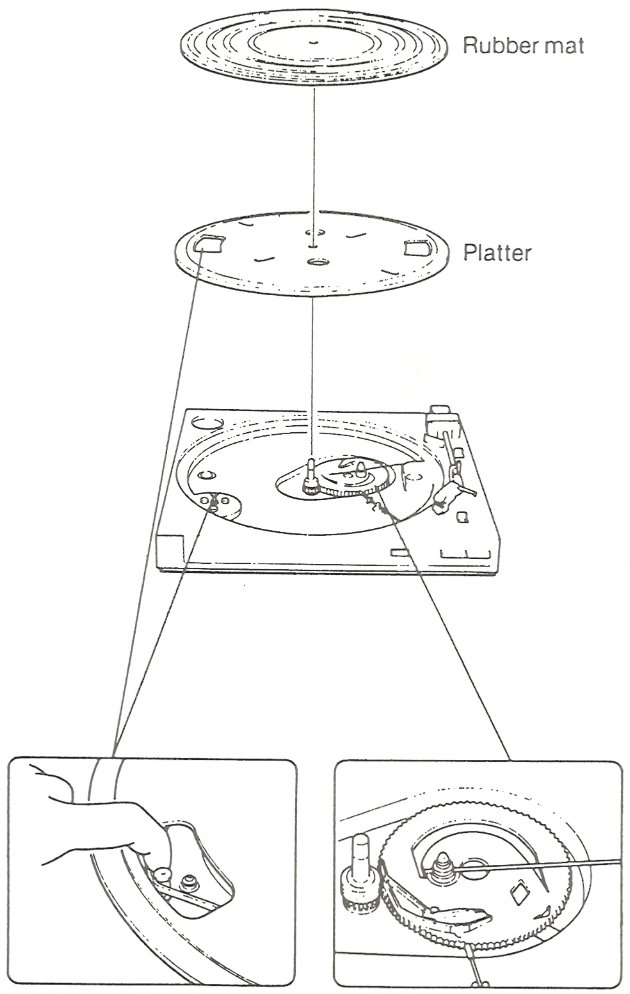

regulated DC power supply
3P connector
3 core cord (BLK)
12V DC
+
−
with white line

LOCATION AND FUNCTION OF CONTROLS


1
2
3
4
5
6
7
8
9
10

- [1] Center spindle
- [2] Rubber mat
- [3] Turntable platter
- [4] POWER switch (PS-LX40 only)
- [5] Cueing lever (▼/▼)
- [6] Tonearm
- [7] Arm rest
- [8] Cartridge
- [9] REJECT button
- [10] SPEED select button
  Allows selection of 45 rpm or 33 rpm turntable speed.

TURNTABLE ASSEMBLY

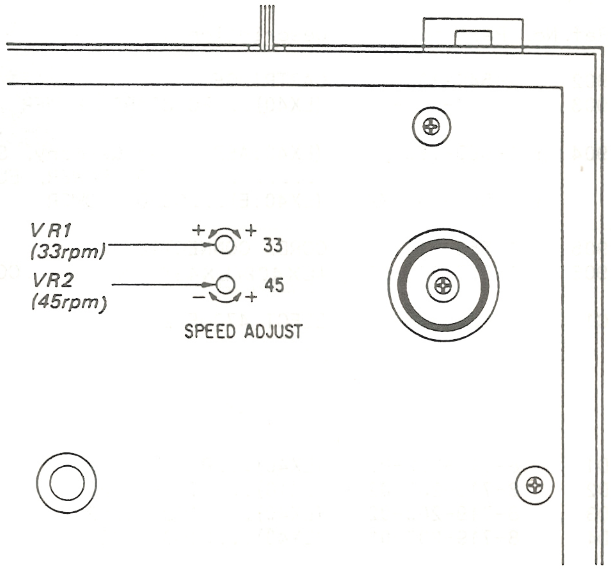

Rubber mat
Platter

Hook the belt on the motor pulley.
If the belt is removed from the platter, replace it with the glossy side outward.

Speed Adjustment

Note: Be sure to perform 45rpm adjustment before 33 rpm.

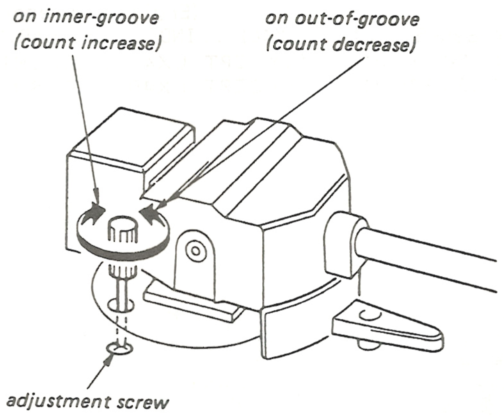
1. Place a stroboscope board on the turntable sheet.
2. Set the SPEED switch to 45.
   Press the START button.
   Adjust VR2 so that the stripped pattern of stroboscope board is stationary.
3. Set the SPEED switch to 33.
   Adjust VR1 in the same way.


VR1
(33rpm)
33
VR2
(45rpm)
45
SPEED ADJUST

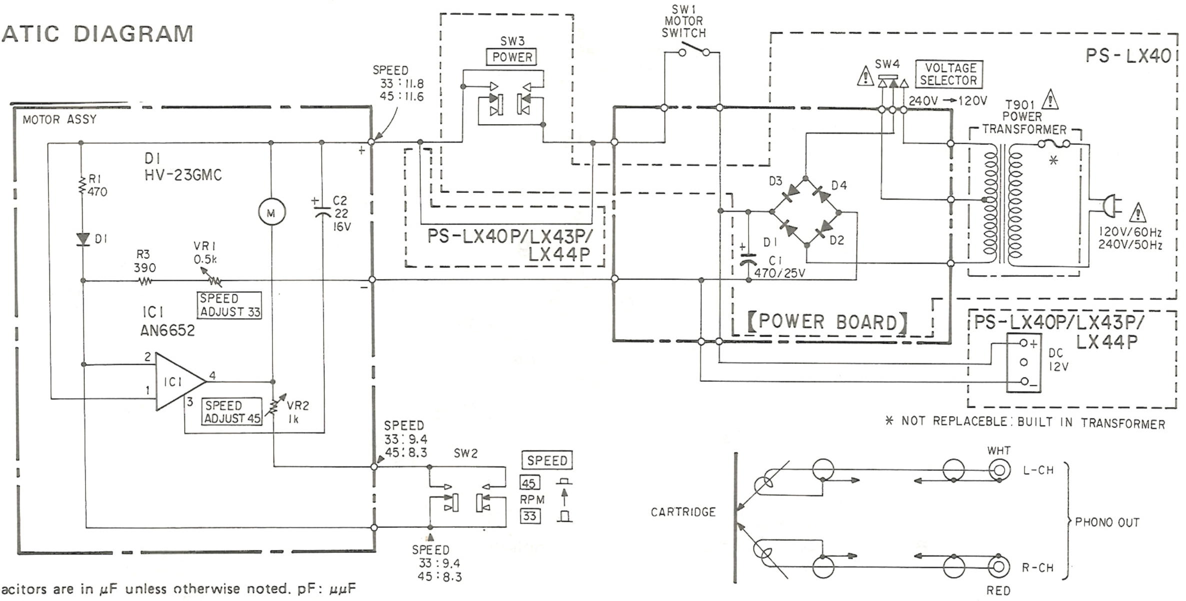
Stylus Drop-point Adjustment

1. Place a test record (YFSC-16) on the turntable sheet.
2. Set the SPEED switch to 33.
3. Press the START button.
4. By using a screwdriver, turn the adjustment screw so that the stylus tip drops on the record at the 7–17 counts position.
5. Move the arm to return detecting groove and confirm that the auto-return operation is started normally.

Note: The proper adjustment for a 30cm record is also correct for a 17cm record.
When turning adjustment screw, put the arm on the arm rest.


on inner-groove
(count increase)
on out-of-groove
(count decrease)
adjustment screw

SCHEMATIC DIAGRAM

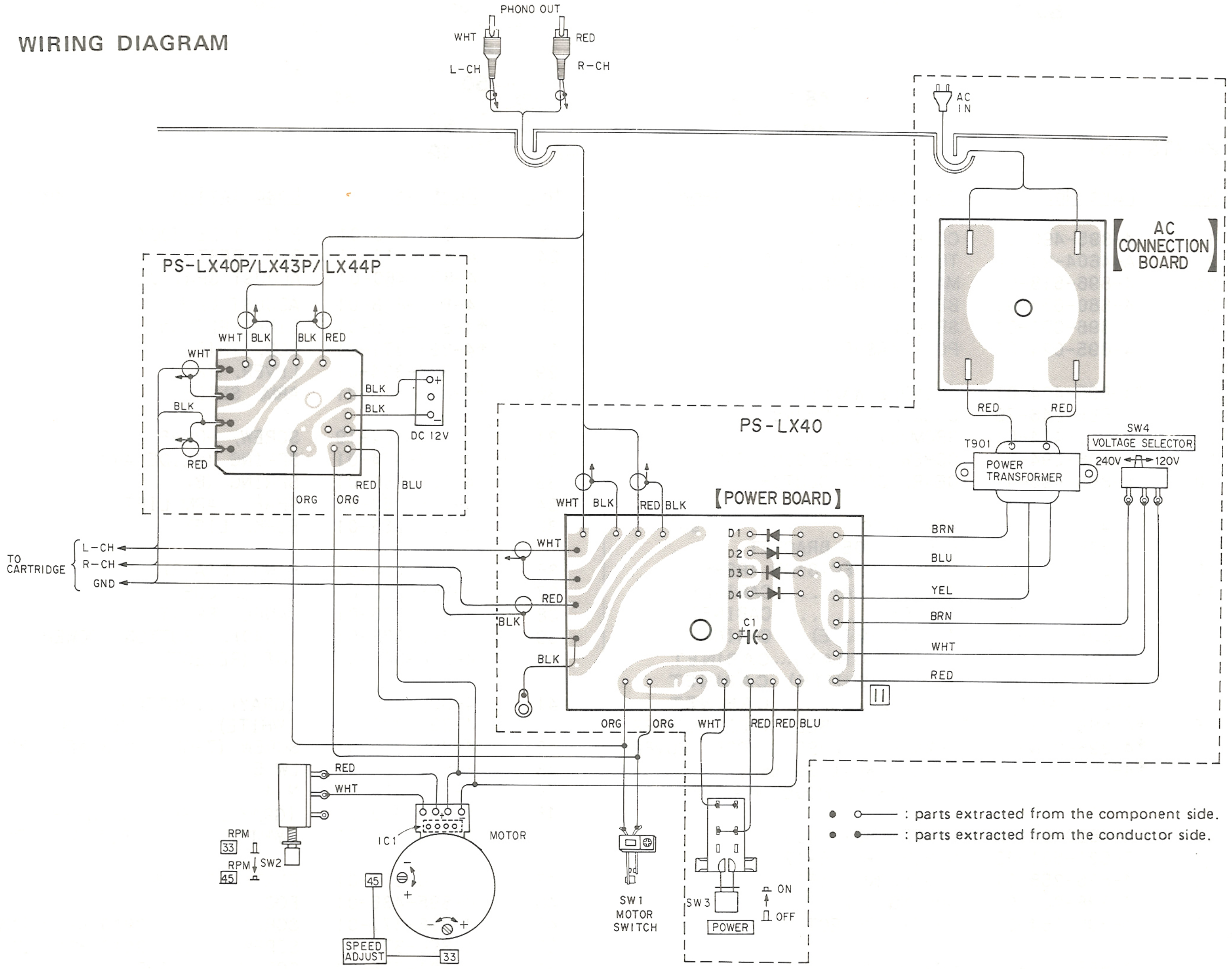

MOTOR ASSY
R1 470
D1
D1 HV-23GMC
R3 390
VR1 0.5k
SPEED ADJUST 33
IC1 AN6652
SPEED ADJUST 45
VR2 1k
M
C2 22 16V
SPEED 33 : 11.8 45 : 11.6
SW3 POWER
PS-LX40P/LX43P/LX44P
SW1 MOTOR SWITCH
SW4 VOLTAGE SELECTOR
240V ⟷ 120V
T901 POWER TRANSFORMER
PS-LX40
D3 D4 D1 D2
C1 470/25V
[POWER BOARD]
120V/60Hz 240V/50Hz
PS-LX40P/LX43P/LX44P
DC 12V
* NOT REPLACEABLE: BUILT IN TRANSFORMER
SPEED 33 : 9.4 45 : 8.3
SW2
SPEED 45 RPM 33
CARTRIDGE
WHT L-CH
RED R-CH
PHONO OUT

Note:
- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- Switches:

Ref. No.	Switch	Position
SW1	MOTOR	OFF
SW2	SPEED	33
SW3	POWER	OFF
SW4	VOLTAGE SELECTOR	240V

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

WIRING DIAGRAM

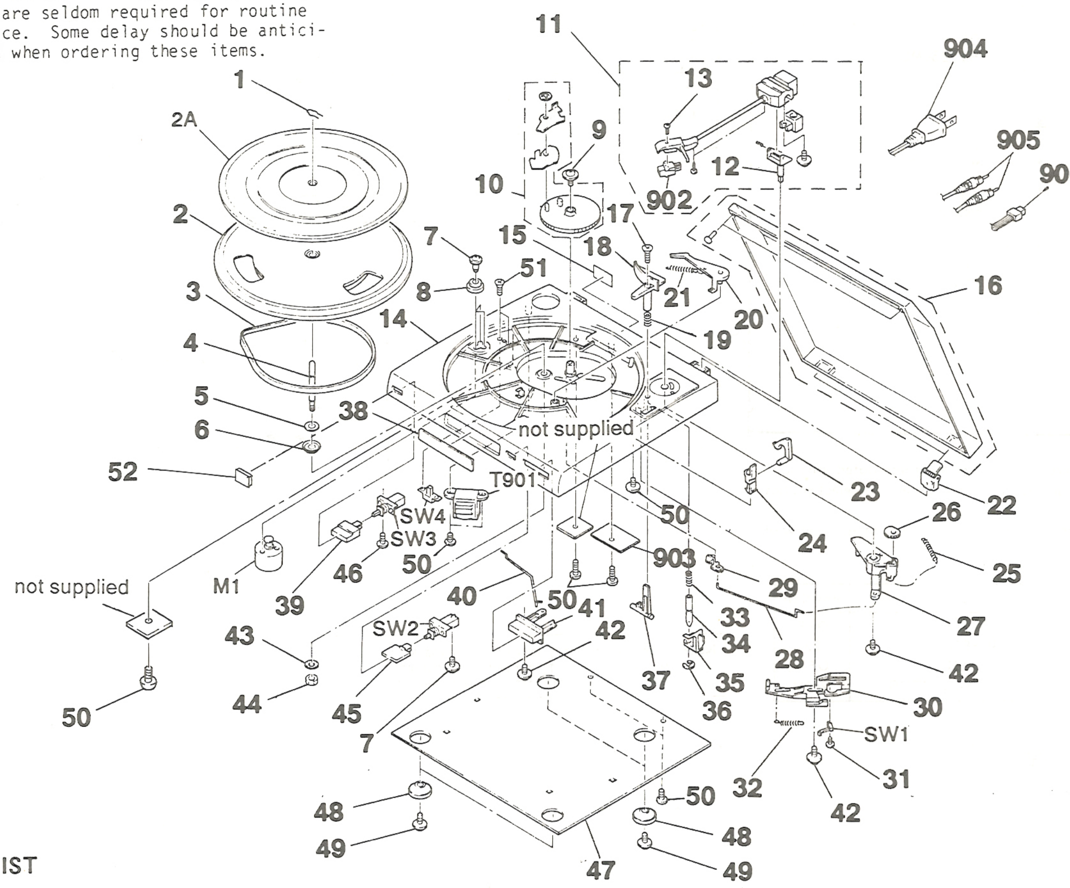

PHONO OUT
WHT L-CH
RED R-CH
AC IN
AC CONNECTION BOARD
PS-LX40P/LX43P/LX44P
WHT BLK BLK RED
BLK RED ORG ORG BLU
DC 12V
PS-LX40
T901 POWER TRANSFORMER
SW4 VOLTAGE SELECTOR 240V 120V
[POWER BOARD]
D1 D2 D3 D4 C1
BRN BLU YEL BRN WHT RED
TO CARTRIDGE L-CH R-CH GND
ORG ORG WHT RED RED BLU
RPM 33 45 SW2
IC1 MOTOR
SPEED ADJUST 45 33
SW1 MOTOR SWITCH
SW3 POWER ON OFF

- ○—— : parts extracted from the component side.
- ●—— : parts extracted from the conductor side.

EXPLODED VIEW

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The construction parts of an assembled part are indicated with a collation number in the remark column.



PARTS LIST

No.	Part No.	Description	Remarks
1	4-895-490-01	CLIP, SPINDLE	
2	A-4604-243-A	TURNTABLE ASSY (Platter)	
2A	4-896-518-01	MAT, TURNTABLE	
3	4-880-655-01	BELT	
4	4-896-361-01	SPINDLE	
5	4-895-024-01	POLY WASHER	
6	*4-895-404-01	SPINDLE WASHER	
7	7-685-646-79	SCREW, TA +BV3x8	
8	4-895-414-01	GROMMET (A)	
9	4-896-294-01	SCREW (7-BID 3006 ZN3A 10D)	
10	4-895-495-01	GEAR, CAM, CLUTCH	
11	A-4604-242-A	ARM ASSY	902
12	4-895-464-01	P.U. HINGE BRACKET	
13	7-627-553-98	SCREW, PRECISION +P2x8	
14	4-896-362-01	(LX40P:GRAY)....CABINET	
	4-896-387-01	(LX40)..........CABINET	
	4-896-504-01	(LX40P:WHITE)...CABINET	
	4-896-544-01	(LX43P:GRAY)...CABINET	
	4-896-545-01	(LX43P:WHITE)..CABINET	
	4-896-546-01	(LX44P)..............CABINET	
15	*4-896-347-01	(LX40)...LABEL, MODEL NUMBER	
	*4-896-348-01	(LX40P)...LABEL, MODEL NUMBER	
	*4-896-348-11	(LX40P:West Germany) ...LABEL, MODEL NUMBER	
16	A-4620-041-A	COVER ASSY, DUST	
17	7-621-561-49	SCREW, +K2.6x12	
18	4-896-258-01	PLATFORM, LIFT	
19	4-896-267-01	SPRING (A)	
20	4-896-364-01	LEVER, REJECT	
21	4-896-365-01	SPRING (C)	
22	4-895-410-01	HINGE ASSY	
23	4-895-418-01	P.U. TUBE HOOK	
24	4-895-417-01	P.U. REST	
25	4-895-460-01	ADJUST SPRING	
26	4-895-818-01	ADJUST CAM	
27	*4-896-372-01	LINK, RETURN	
28	*4-896-371-01	ROD, TRIP	
29	4-896-304-01	LEVER, TRIP	
30	*4-896-373-01	ARM, SLIDE	
31	7-685-104-19	SCREW, +P2x6	
32	4-896-374-01	SPRING (SLIDE ARM)	
33	4-896-251-01	SPRING (B)	
34	4-896-252-01	SHAFT, ARM LIFT	
35	4-896-253-01	FORK, LIFT	
36	4-896-254-01	RING (DIA.3), E	
37	4-896-212-01	LEVER, CUE	
38	4-896-366-01	PANEL, FRONT	
39	4-896-388-01	(LX40)...BUTTON, POWER	
40	4-896-367-01	LOT (REJECT)	
41	4-896-368-01	(GRAY)...BUTTON, STOP	
	4-896-398-01	(WHITE).......BUTTON, STOP	
42	4-896-369-01	SCREW (7-CUP 3008 WF12 ZN3A)	
43	7-623-424-07	LW 5	
44	7-684-024-04	N 4	
45	4-896-370-01	(GRAY)...BUTTON, SPEED	
	4-896-399-01	(WHITE).......BUTTON, SPEED	
47	4-896-376-01	PLATE, BOTTOM	
48	4-895-435-01	FOOT	
49	4-896-377-01	SCREW (7-CUP 3010 WF12 ZN3A)	
50	4-896-375-01	SCREW (7-CUP 3012 WF08 ZN3K)	
51	7-621-775-20	SCREW, +B2.6x5	
52	4-925-161-21	(LX44P).........EMBLEM(4-A),SONY	

ELECTRICAL PARTS

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.		Part No.	Description
902		1-549-135-11	CARTRIDGE
903		- - -	(LX40)...PC BOARD, POWER
904	⚠	1-555-795-00	(LX40:AEP, West Germany, Saudi Arabia) ....CORD, POWER, EULO PLUG
	⚠	1-551-188-XX	(LX40:E)...CORD, POWER
905		1-555-116-11	CORD, CONNECTION
906		1-557-109-21	(LX40P/LX43P/LX44P)...CORD, CONNECTION (3 CORE)
C1		1-123-336-00	ELECT 470μF 25V
D1		8-719-200-02	(LX40)...DIODE 10E2
D2		8-719-200-02	(LX40)...DIODE 10E2
D3		8-719-200-02	(LX40)...DIODE 10E2
D4		8-719-200-02	(LX40)...DIODE 10E2
M1		A-4604-244-A	MOTOR ASSY
SW1		1-570-666-11	SWITCH, LEAF
SW2		1-571-089-11	SWITCH, PUSH (1 KEY) (SPEED)
SW3		1-571-560-11	(LX40)...SWITCH, PUSH (1 KEY) (POWER)
SW4	⚠	1-571-088-11	(LX40)...SWITCH, SLIDE (VOLTAGE SELECTOR)
T901	⚠	1-449-291-11	(LX40)...TRANSFORMER, POWER

ACCESSORY & PACKING MATERIAL

Part No.	Description
3-701-806-00	ADAPTOR, 45
3-750-345-11	(LX40)...MANUAL, INSTRUCTION (English, French, Spanish)
4-896-513-01	(LX40)...INDIVIDUAL CARTON
4-896-384-01	(EXCEPT LX40)......CUSHION(R)
4-896-385-01	(EXCEPT LX40)......CUSHION(L)

9-955-811-11

Sony Corporation
Audio Group

English
90D09100-1
Printed in Japan
© 1990.4
Published by Customer Relations and Service Group

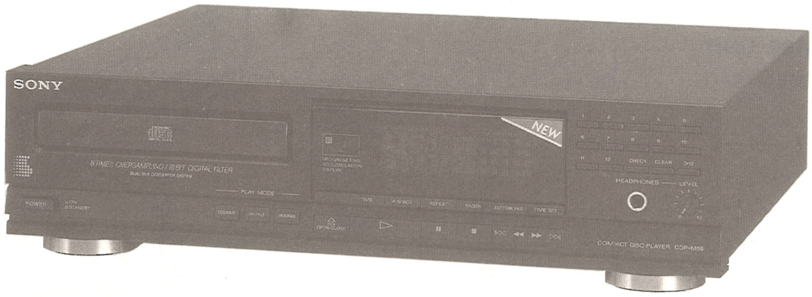
CDP-M48/M49/M69

SERVICE MANUAL

AEP Model
CDP-M48

AEP Model
Australian Model
E Model
CDP-M49

AEP Model
E Model
CDP-M69



This photo is CDP-M69.

SPECIFICATIONS

Compact disc player

Frequency response	2 Hz – 20 kHz ± 0.5 dB
Signal to noise ratio	More than 100 dB
Dynamic range	More than 92 dB
Harmonic distortion	Less than 0.008%
Channel separation	More than 95 dB

Outputs

LINE OUT (phono jacks)	Output level 2 V (at 50 kilohms) Load impedance over 10 kilohms
HEADPHONES (stereo phone jack) (CDP-M49/M69)	Output level max. 10 mW Load impedance 32 ohms

General

Power requirements	AEP model: 220V AC (or 240V AC adjustable by Sony personnel), 50/60 Hz UK model: 240V AC (or 220V AC adjustable by Sony personnel), 50/60 Hz Other model: 110 V – 120 V AC (or 220 V – 240 V AC adjustable by Sony personnel), 50/60 Hz
Power consumption	11 W
Dimensions (approx., including projections)	355 x 95 x 305 mm (w/h/d) (14 x 3¾ x $12^1/_8$ inches)
Weight (approx.)	3.0 kg (6 lbs 10 oz)

Model Name Using Similar Mechanism	CDP-M18
CD Mechanism Name	CDM14-5BD1
Base Unit Name	BU-5BD1

Supplied accessories

	CDP-M69	CDP-M48/M49
Audio cord	1 (2 phono plugs – 2 phono plugs)	
Remote commander	1	–
Sony SUM-3 (NS) batteries	2	–

Remote commander

Remote control system	Infrared control
Power requirements	3 V DC with two R6 (size AA) batteries
Dimensions	Approx. 40 × 20 × 175 mm (w/h/d) $1^5/_8 \times {}^{13}/_{16} \times 7$ inches)
Weight	Approx. 95 g (3.4 oz) Including batteries

Design and specifications subject to change without notice.

MICROFILM

COMPACT DISC PLAYER

SONY®

TABLE OF CONTENTS

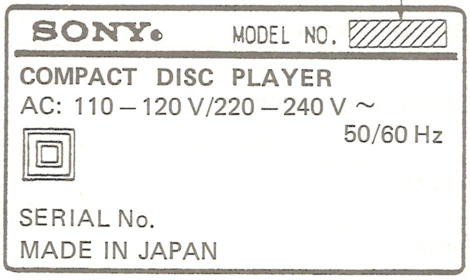
Section	Title	Page
	Specifications	1
	Servicing Note	2
	Protection of Eyes from Laser Beam During Servicing	3
SECTION 1.	GENERAL	
	1-1. Location and Function of Controls	4
SECTION 2.	DISSASSEMBLY OF BASE UNIT	5
SECTION 3.	ELECTRICAL ADJUSTMENTS	6
SECTION 4.	DIAGRAMS	
	Waveforms	9
	IC Block Diagram	9
	4-1. Printed Wiring Boards	11
	4-2. Schematic Diagram	15
SECTION 5.	EXPLODED VIEWS	18
SECTION 6.	ELECTRICAL PARTS LIST	22

MODEL IDENTIFICATIONS

—Specition Label—

CDP-M49
CDP-M69

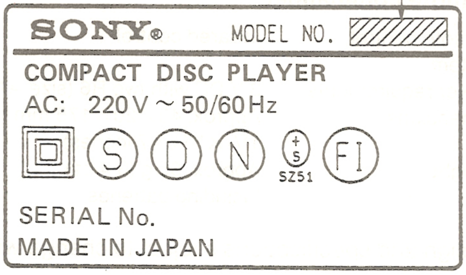
E model:



SONY MODEL NO. ▨
COMPACT DISC PLAYER
AC: 110 – 120 V/220 – 240 V ~
50/60 Hz
SERIAL No.
MADE IN JAPAN

CDP-M48
CDP-M49
CDP-M69

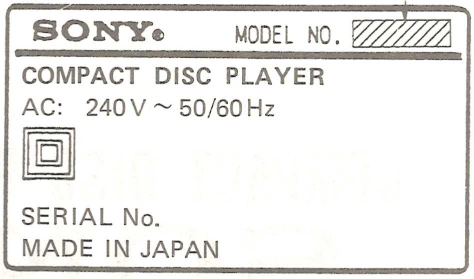
AEP model:



SONY MODEL NO. ▨
COMPACT DISC PLAYER
AC: 220 V ~ 50/60 Hz
Ⓢ Ⓓ Ⓝ SZ51 FI
SERIAL No.
MADE IN JAPAN

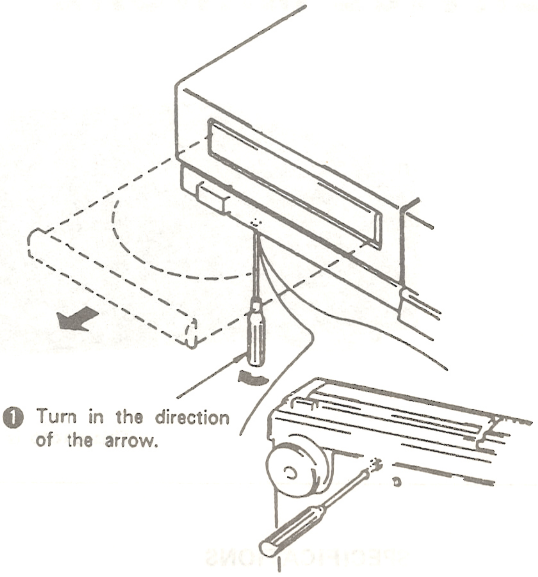
CDP-M49

Australian model:



SONY MODEL NO. ▨
COMPACT DISC PLAYER
AC: 240 V ~ 50/60 Hz
SERIAL No.
MADE IN JAPAN

HOW TO OPEN THE DISC TRAY WHEN POWER SWTCH TURNS OFF



① Turn in the direction of the arrow.

Caution : When you work, keep the set horizontal.

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe more than 25 cm away from the objective lens.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs a laser. Therefore, be sure to follow carefully the instructions below when servicing.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

1. Laser Diode Properties
   - Material: GaAlAs
   - Wavelength: 780 nm
   - Emission Duration: continuous
   - Laser Output: max. 44.6 μW*

   * This output is the value measured at a distance of about 200 mm from the objective lens surface on the Optical Pick-up Block.

2. During service, do not take the Optical Pick-up Block apart, and do not adjust the APC circuit. If there is a breakdown in the APC circuit (including laser diode), replace the entire Optiocal Pick-up Block (including APC borad).

BESKYTTELSE AF ØJNE MOD LASERSTRÅLING UNDER SERVICE

I dette apparat anvendes laserlys. Derfor skal nedenstående instruktioner nøje følges under service.

Følg iøvrigt instruktionerne i servicemanualen.

ADVARSEL!!

Under service må øjnene ikke komme nær objektiv-linsen på den optiske pick-up enhed. I tilfælde af at det er nødvendigt at kontrollere udsendelsen af laserlys, skal det ske i en afstand af mere end 25 cm fra den optiske pick-up.

1. Laser-didoe data
   - Materiale: GaAlAs
   - Bølgelængde: 780 nm
   - Udstraling: Kontinuerlig
   - Laseroutput: Max. 0,4 mW*

   * Målt i 1,6 mm afstand fra overfladen af objektiv-linsen pa den optiske pick-up enhed.

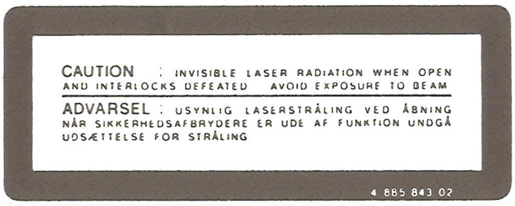
   - Klassifikation: Klasse IIIb.

2. Adskil aldrig den optiske pick-up enhed under service, og juster ikke APC kredsløbet (Automatic Power Control). Hvis APC kredsløbet (incl. laser-dioden) bryder ned, skal hele den optiske pick-up enhed (incl. APC printkortet) udskiftes.

LASER ADVARSEL MÆRKNING

Følgende mærkning findes indvendig i apparatet:

1. Advarsel Mærkning



CAUTION : INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCKS DEFEATED AVOID EXPOSURE TO BEAM

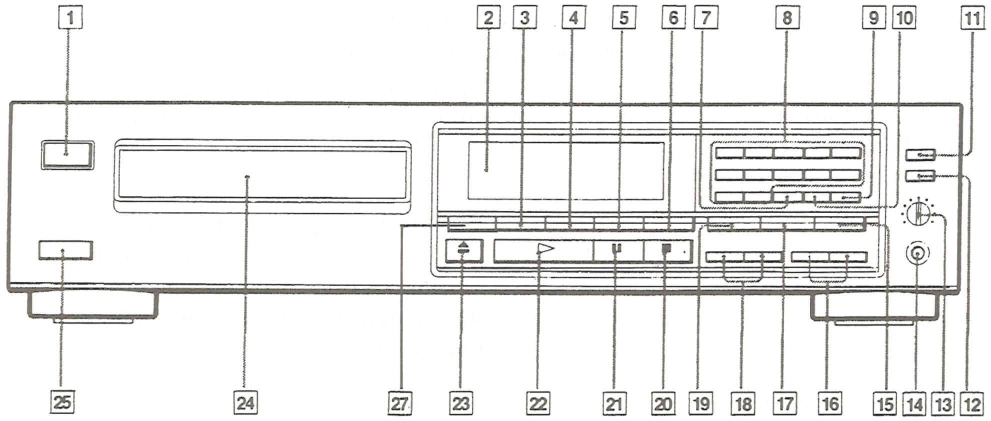
ADVARSEL : USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION UNDGÅ UDSÆTTELSE FOR STRÅLING

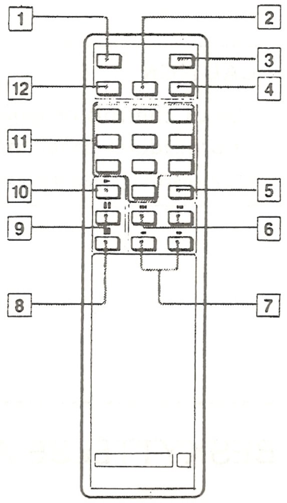
4 885 843 02

VAROITUS: Laite sisältää, laserdiodin, joka lähettää (näkymätöntä) silmille vaarallista lasersäteilyä.

SECTION 1
GENERAL

1-1. LOCATION AND FUNCTION OF CONTROLS





1 POWER switch
2 Display window
3 TIME button
4 A. SPACE button
5 REPEAT button
6 FADER (FADE IN/FADE OUT) button
7 CHECK (program check) button
8 Numeric buttons
9 ▷12 (over 12) button
10 CLEAR (program clear) button
11 EDIT/TIME FADE button
12 TIME SET button
13 HEADPHONES LEVEL control (for CDP-M69/M49)
14 HEADPHONES jack (for CDP-M69/M49)
15 PROGRAM button
16 ◀◀ ▶▶ (manual search) buttons
17 SHUFFLE button
18 |◀◀ ▶▶| (AMS*/RMS**) buttons
19 CONTINUE button
20 ■ (stop) button
21 ❚❚ (pause) button
22 ▶ (play) button
23 ⏏ (open/close) button
24 Disc tray
25 Remote sensor
26 |◀◀ ▶▶| (AMS*/RMS**)/◀◀ ▶▶ (manual search) buttons
27 PEAK SEARCH button (Australian, E Model).

1 REPEAT button
2 SHUFFLE button
3 FADER (FADE IN/FADE OUT) button
4 PGM (program) button
5 ▷10 (over 10) button
6 |◀◀ ▶▶| AMS buttons
7 ◀◀ ▶▶ (manual search) buttons
8 ■ (stop) button
9 ❚❚ (pause) button
10 ▶ (play) button
11 Numeric buttons
12 CONTINUE button

* AMS is an abbreviation of Automatic Music Sensor.
** RMS is the abbreviation of Random Music Sensor.

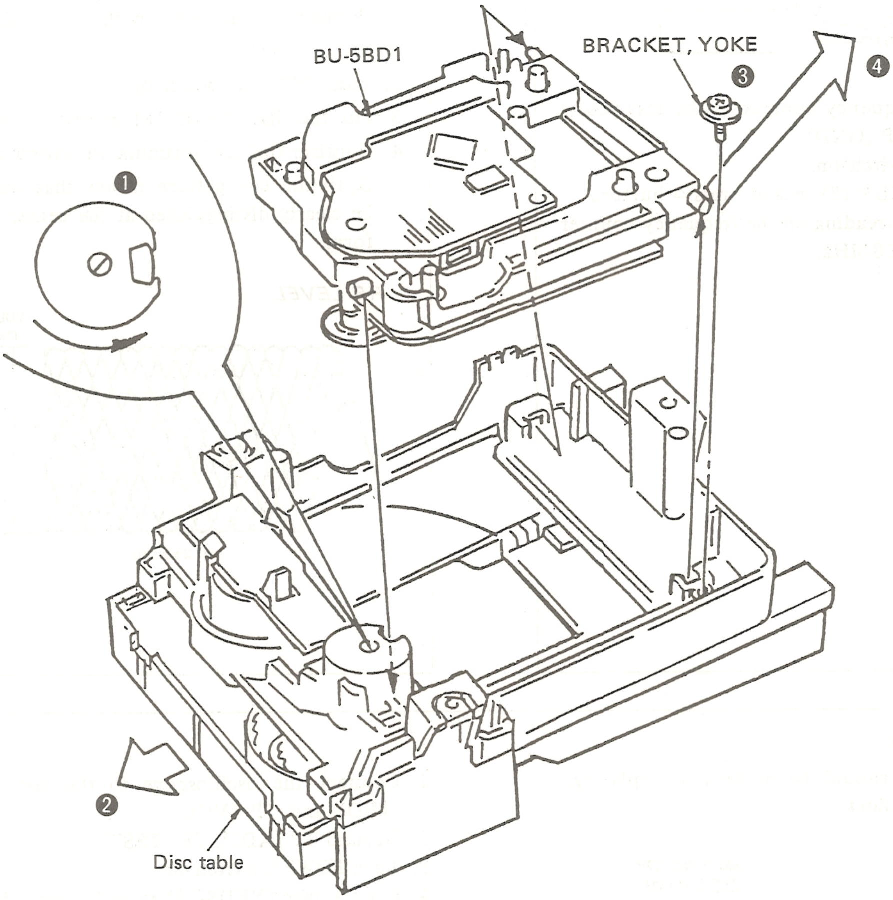
SECTION 2

DISSASSEMBLY OF BASE UNIT

REMOVE THE MD (BU-5BD)

Note: Follow the disassembly procedure in the numerical order given.

❶. Turn the cam to the direction of arrow (Counter clock wise) by minus screw driver.
❷. Take off the disc table.
❸. Remove the bracket yoke.
❹. Remove the MD (BU-5BD1) to the direction of arrow.


BU-5BD1
BRACKET, YOKE
❸
❹
❶
❷
Disc table

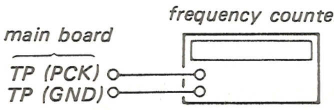
SECTION 3
ELECTRICAL ADJUSTMENTS

ELECTRICAL ADJUSTMENTS

1. Perform adjustments in the order given.
2. Use YEDS-18 (Part No. 3-702-101-01) disc unless otherwise indicated.
3. Use the oscilloscope with more than 10MΩ impedance.

RF PLL Free-run Frequency Check

Procedure:

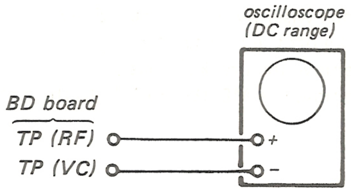


1. Connect the frequency counter to the test points TP (PCK) and TP (GND).
2. Turn POWER switch on.
3. Put the disc (YEDS-18) in and press △ button.
4. Confirm that the reading on the frequency counter is locked at 4.3218 MHz.

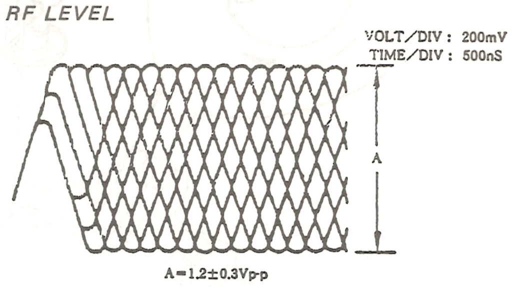
RF LEVEL Check

This adjustment should be made after replacing the Optical Pick-up Block.

Procedure:



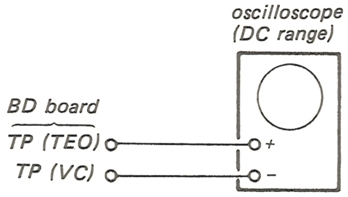
1. Connect oscilloscope to the test points TP (RF) and TP (VC).
2. Turn POWER switch on.
3. Put the disc (YEDS-18) in and press △ button.
4. Confirm that an optimum waveform eye pattern. Optimum eye pattern means that shape "◇" can be clearly distinguished at the center of the waveform.



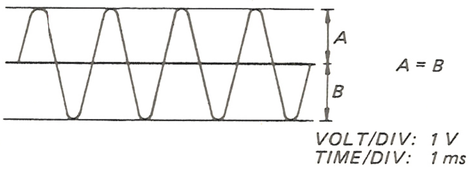
E-F Balance Check

This adjustment should be made after replacing the Optical Pick-up Block.

Procedure:



1. Connect the oscilloscope to the test points TP (TEO) and TP (VC).
2. Ground TP (ADJ), TP (TEST).
3. Turn POWER switch on.
4. Put the disc (YEDS-18) in and press △ button.
5. Confirm that the traverse waveform is symmetrical above and below.
6. After adjustment, remove the TP (ADJ), TP (TEST) in ground.



REFERENCE

Focus/Tracking Gain Adjustment

A frequency response analyzer is necessary in order to perform this adjustment exactly.

However, this gain has a margine, so even if it is slightly off, there is no problem. Therefore, this adjustment is not recomended generally to be performed.

Focus/tracking gains determine the pick-up follow-up (vertical and horizontal) relative to mechanical noise and mechanical shock when the 2-axis device operate.

However, as these reciprocate, the adjustment is at the point where both are satisfied.

- When gain is raised, the noise when the 2-axis device operates increases.
- When gain is lowered, it is more susceptible to mechanical shock and skipping occurs more easily.
- When gain adjustment is off, the symptoms below appear.

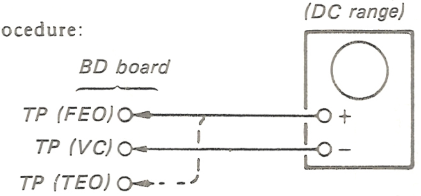
Gain Symptoms	Focus	Tracking
• The time until music starts becomes longer for STOP →▷PLAY or automatic selection (⏮ ⏭ buttons pressed. (Normally takes about 2 seconds.)	low	low or high
• Music does not start and disc continues to rotate for STOP→▷PLAY or automatic selection (⏮ ⏭ buttons pressed.)		low
• Disc table opens shortly after STOP→▷PLAY.	low or high	
• Sound is interrupted during PLAY. Or time counter display stops progressing.		low
• More noise during 2-axis device operation.	high	high

The following is a simple adjustment method.

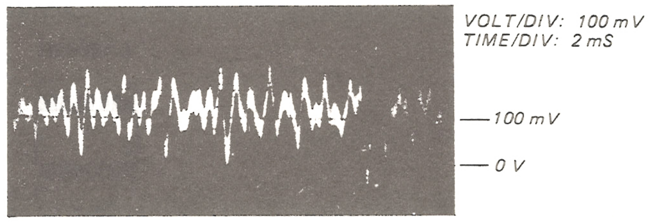
– Simple Adjustment –

Note: Since exact adjustment cannot be performed, remember the positions of the controls before performing the adjustment. If the positions after the simple adjustment are only a little different, return the controls to the original position.

Procedure:

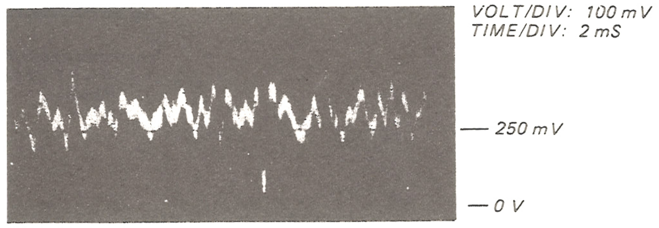


1. Keep the set flat.
   If the set is not horizontal, this adjustment cannot be performed due to the gravity against the 2 axis device.
2. Insert the disc (YEDS-18) and press ▷ PLAY button.
3. Connect the oscilloscope to TP (FEI) and TP (FEO).
4. Adjustment RV102 so that the waveform is as shown in the picture below. (focus gain adjustment)

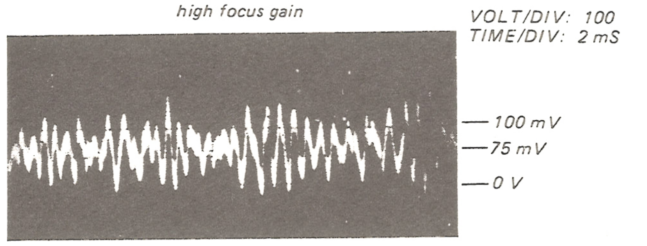


- Incorrent Examples (DC level is quite different from the adjusted waveform) (below)

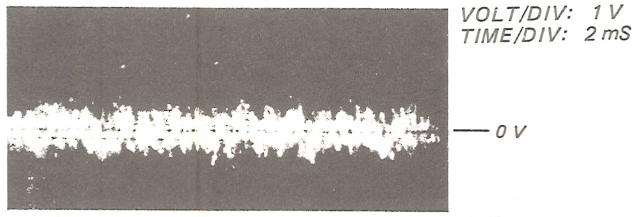
low focus gain



high focus gain

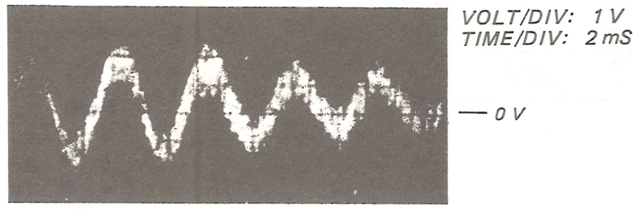


5. Connect the oscilloscpe to BD BOARD TP (TEO).
6. Adjust RV101 so that the waveform is as shown in the picture below. (tracking gain adjustment)

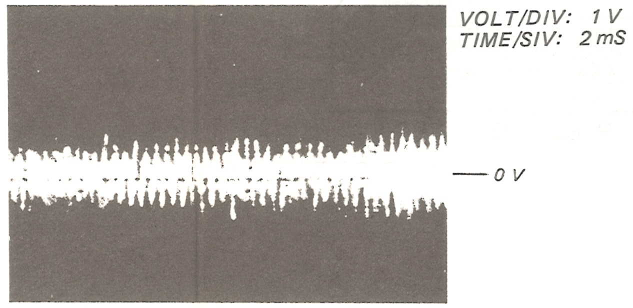


- Incorrect Examples (fundamental wave appears)

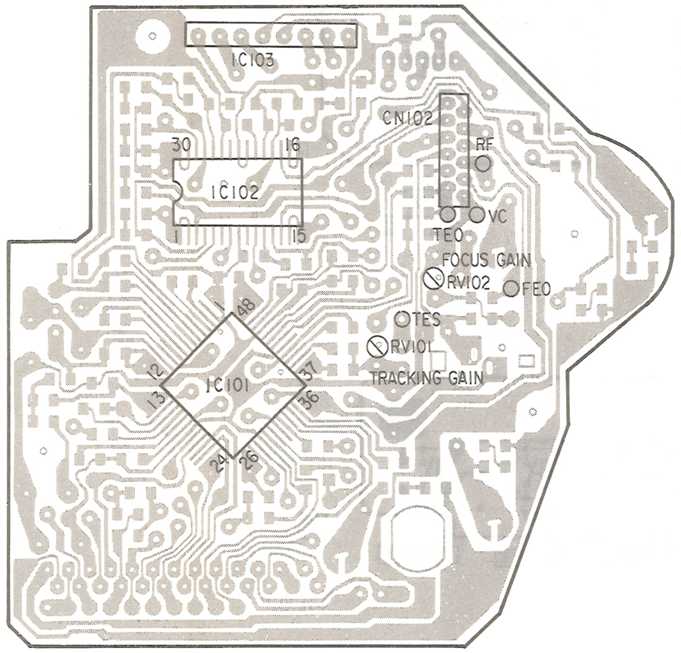
low tracking gain



high tracking gain
(higher frequency of the fundamental wave than above)

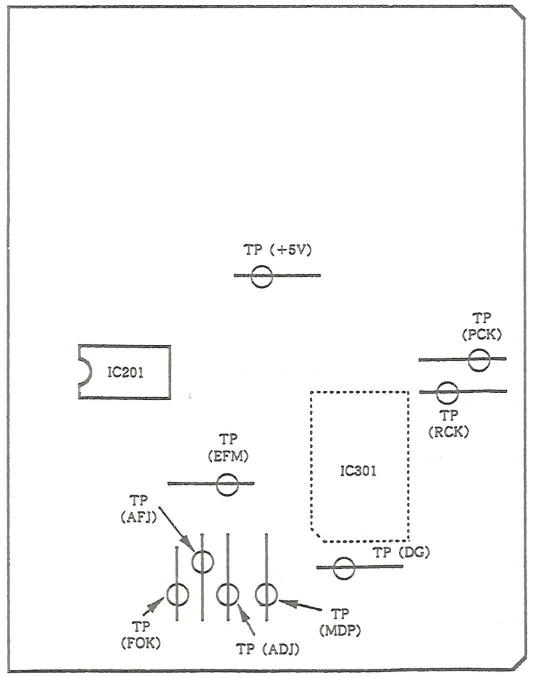


BD BOARD (component side)



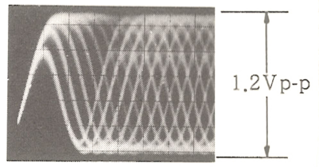
Adjustment Location:

MAIN BOARD (component side)



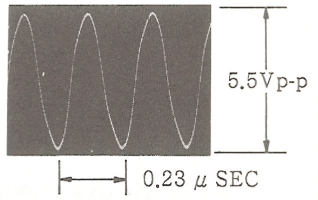
WAVEFORMS

① MODE : PLAY



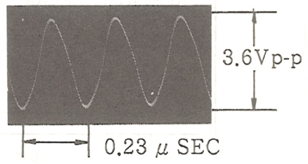
IC101 (40) RFO

② MODE : STOP



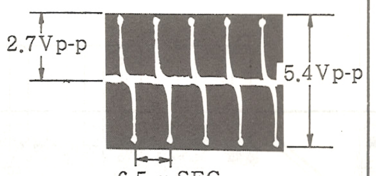
IC401 (57) X2

③ MODE : STOP



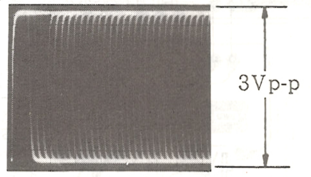
IC401 (56) X1

④ MODE : PLAY



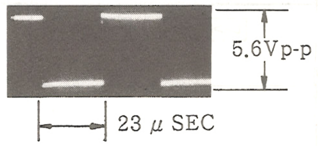
IC301 ④ MDP

⑤ MODE : PLAY

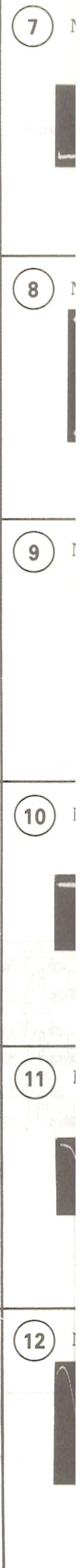


IC301 ㉔ EFM

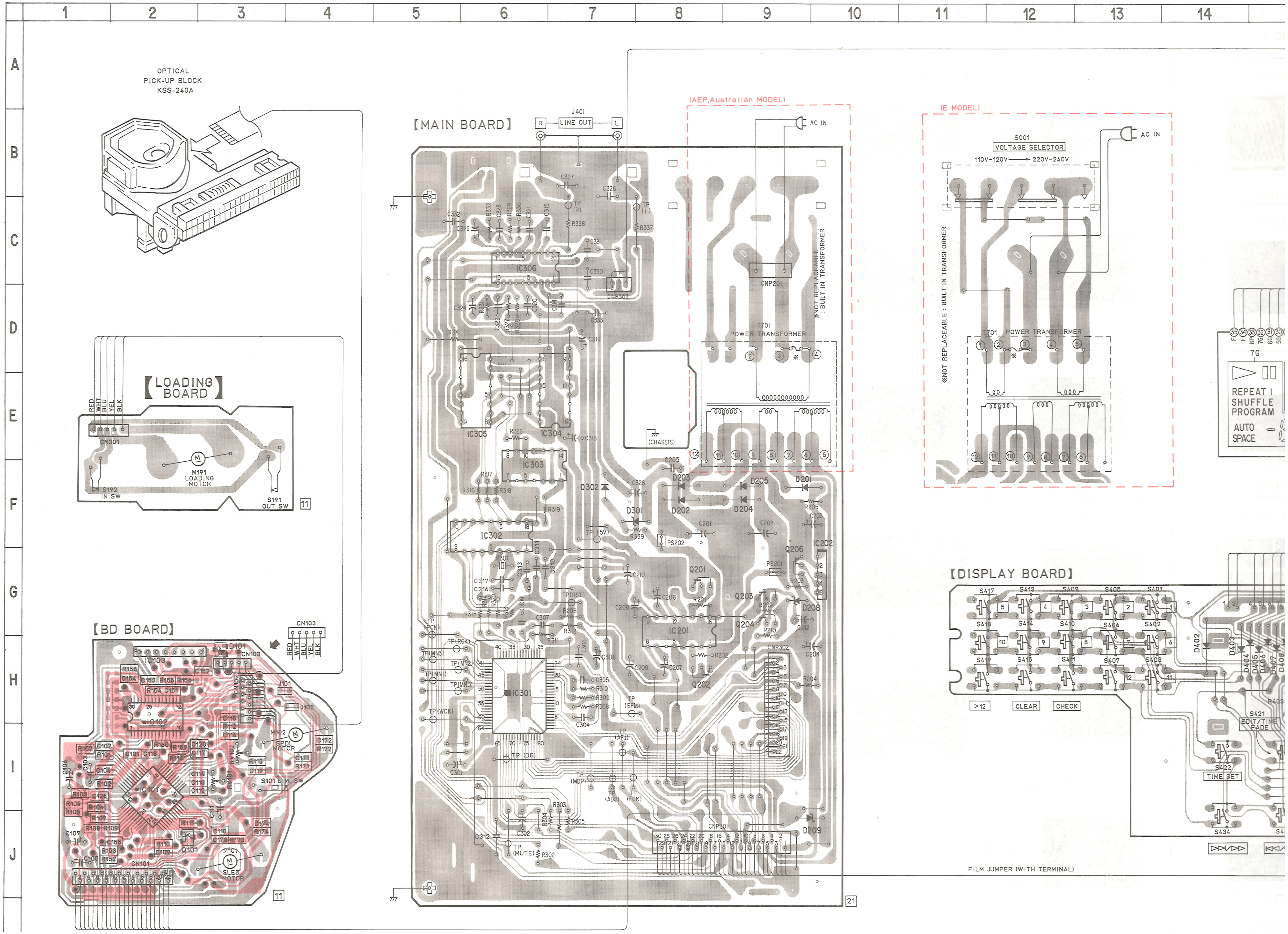
⑥ MODE : STOP



IC301 ㉜ LRCK



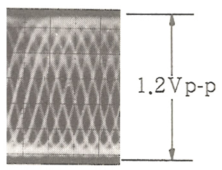
4-1. PRINTED WIRING BOARDS


1
2
3
4
5
6
7
8
9
10
11
12
13
14
A
B
C
D
E
F
G
H
I
J
OPTICAL
PICK-UP BLOCK
KSS-240A
[MAIN BOARD]
J401
LINE OUT
R
L
(AEP,Australian MODEL)
AC IN
CNP201
T701
POWER TRANSFORMER
※NOT REPLACEABLE
: BUILT IN TRANSFORMER
(E MODEL)
S001
VOLTAGE SELECTOR
110V–120V
220V–240V
※NOT REPLACEABLE : BUILT IN TRANSFORMER
[LOADING BOARD]
RED
WHT
BLU
YEL
BLK
CN301
M191
LOADING
MOTOR
S192
IN SW
S191
OUT SW
IC306
IC305
IC304
IC303
IC302
IC301
IC201
CNP303
CNP302
CNP301
(CHASSIS)
D201
D202
D203
D204
D205
D208
D209
D301
D302
Q201
Q202
Q203
Q204
Q206
TP (RCK)
TP (WCK)
TP (DG)
TP (AFJ)
TP (EFM)
TP (MDP)
TP (ADJ)
TP (FOK)
TP (MUTE)
TP (RST)
TP (+5V)
[BD BOARD]
CN103
IC101
IC102
IC103
CN101
CN102
M102
SPDL
MOTOR
M101
SLED
MOTOR
S101 LIM. SW
D101
[DISPLAY BOARD]
>12
CLEAR
CHECK
REPEAT
SHUFFLE
PROGRAM
AUTO
SPACE
S421
EDIT/TIME
FADE
S422
TIME SET
S434
FILM JUMPER (WITH TERMINAL)
11
21

SECTION 4
DIAGRAMS

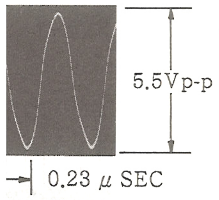
S

: PLAY



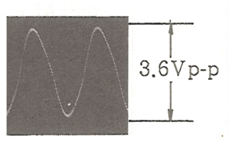
1 ㊵ RFO

: STOP



401 ㊼ X2

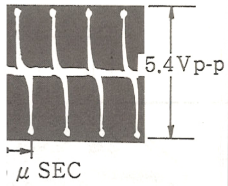
: STOP



0.23 μ SEC

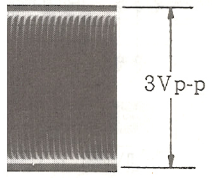
401 ㊻ X1

: PLAY



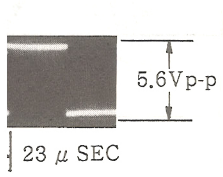
01 ④ MDP

: PLAY



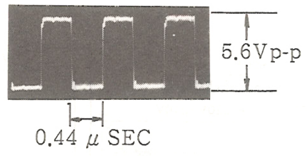
01 ㉔ EFM

: STOP



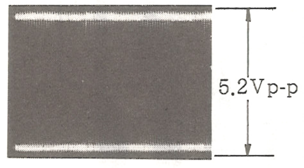
301 ㉜ LRCK

⑦ MODE : STOP



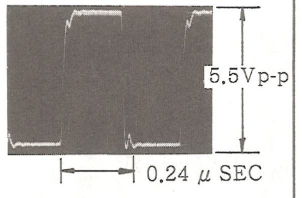
IC301 ㉟ BCLK

⑧ MODE : PLAY



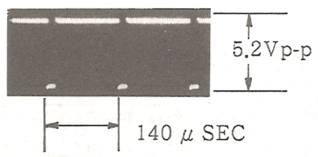
IC302 ⑦ DATA
IC301 ㉞ DATA

⑨ MODE : PLAY



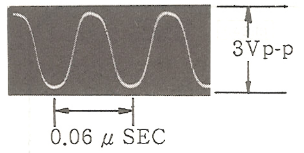
IC301 ㊶ PLCK

⑩ MODE : STOP



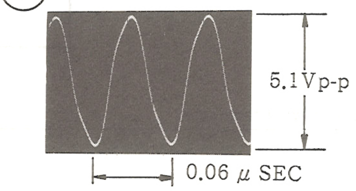
IC301 ㊻ MNT3

⑪ MODE : STOP



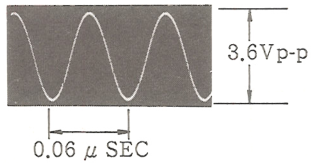
IC301 ㊸ XTAI

⑫ MODE : STOP



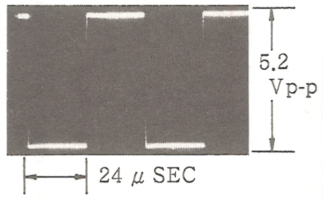
IC302 ③ XOUT

⑬ MODE : STOP



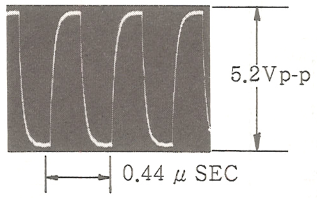
IC302 ④ X IN

⑭ MODE : STOP



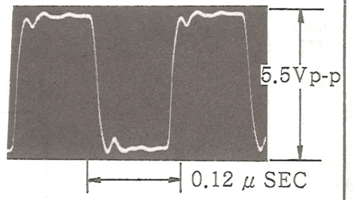
IC302 ⑧ LRCK

⑮ MODE : STOP



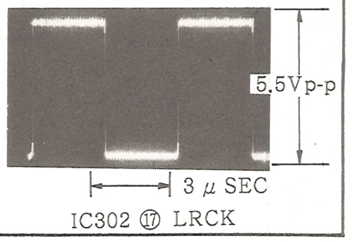
IC302 ⑥ BCK

⑯ MODE : STOP



IC302 ⑬ BCK

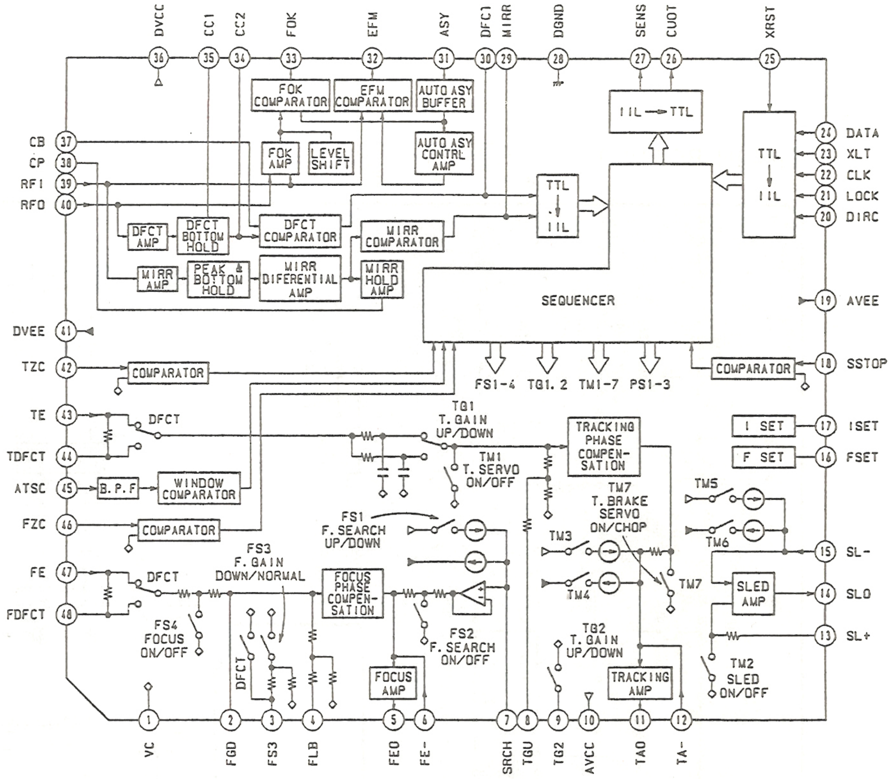
⑰ MODE : STOP



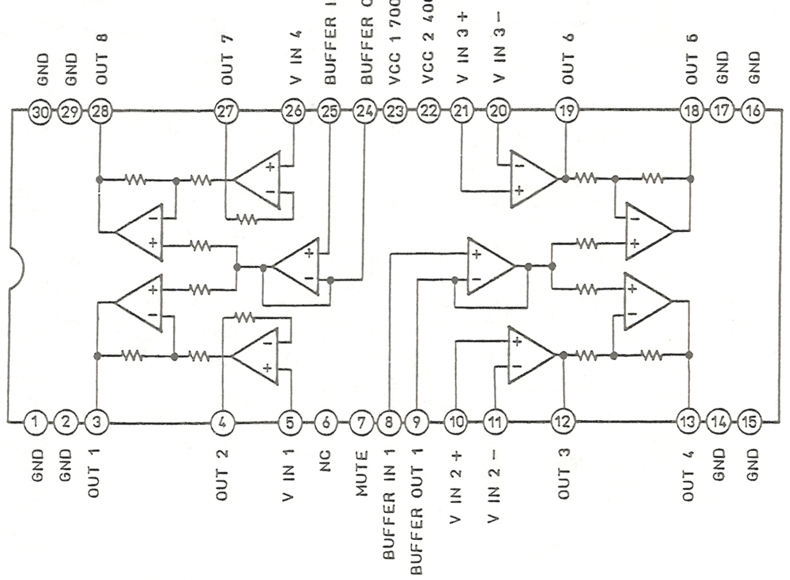
IC302 ⑰ LRCK

● IC BLOCK DIAGRAM

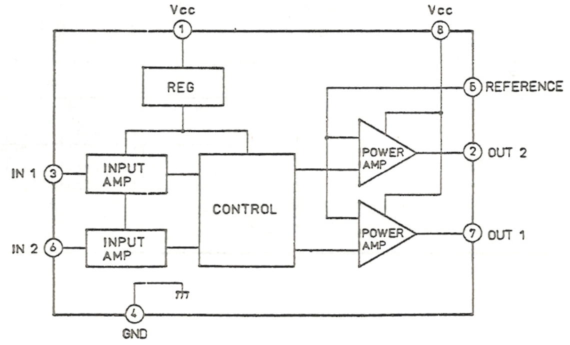
IC101 CXA1372Q


DVCC
CC1
CC2
FOK
EFM
ASY
DFCT
MIRR
DGND
SENS
CLOT
XRST
FOK COMPARATOR
EFM COMPARATOR
AUTO ASY BUFFER
FOK AMP
LEVEL SHIFT
AUTO ASY CONTROL AMP
IIL → TTL
TTL
IIL
DFCT AMP
DFCT BOTTOM HOLD
DFCT COMPARATOR
MIRR COMPARATOR
MIRR AMP
PEAK & BOTTOM HOLD
MIRR DIFFERENTIAL AMP
MIRR HOLD AMP
SEQUENCER
CB
CP
RFI
RFO
DVEE
TZC
TE
TDFCT
ATSC
FZC
FE
FDFCT
COMPARATOR
DFCT
B.P.F
WINDOW COMPARATOR
FS1-4
TG1, 2
TM1-7
PS1-3
TG1 T.GAIN UP/DOWN
TM1 T.SERVO ON/OFF
TRACKING PHASE COMPEN-SATION
TM7 T.BRAKE SERVO ON/CHOP
TM3
TM4
TM5
TM6
TM7
FS1 F.SEARCH UP/DOWN
FS3 F.GAIN DOWN/NORMAL
FOCUS PHASE COMPEN-SATION
FS4 FOCUS ON/OFF
FS2 F.SEARCH ON/OFF
FOCUS AMP
TG2 T.GAIN UP/DOWN
TRACKING AMP
SLED AMP
TM2 SLED ON/OFF
I SET
F SET
DATA
XLT
CLK
LOCK
DIRC
AVEE
SSTOP
ISET
FSET
SL-
SLO
SL+
VC
FGD
FS3
FLB
FEO
FE-
SRCH
TGU
TG2
AVCC
TAO
TA-

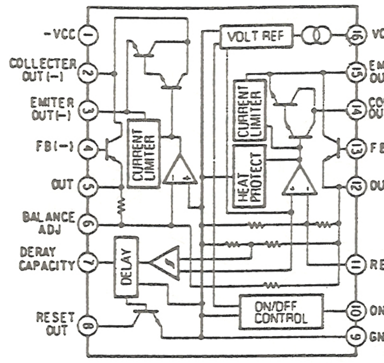
IC102
LA6532M


GND
GND
OUT 8
OUT 7
V IN 4
BUFFER IN 2
BUFFER OUT 2
VCC 1 700MA
VCC 2 400MA
V IN 3 +
V IN 3 -
OUT 6
OUT 5
GND
GND
GND
GND
OUT 1
OUT 2
V IN 1
NC
MUTE
BUFFER IN 1
BUFFER OUT 1
V IN 2 +
V IN 2 -
OUT 3
OUT 4
GND
GND

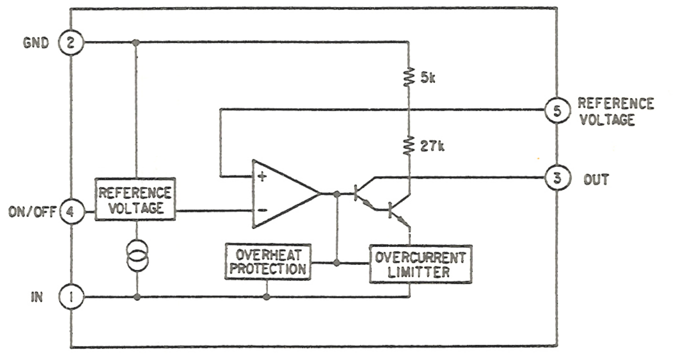
IC103 M54641L


Vcc
Vcc
REG
INPUT AMP
INPUT AMP
CONTROL
POWER AMP
POWER AMP
IN 1
IN 2
REFERENCE
OUT 2
OUT 1
GND

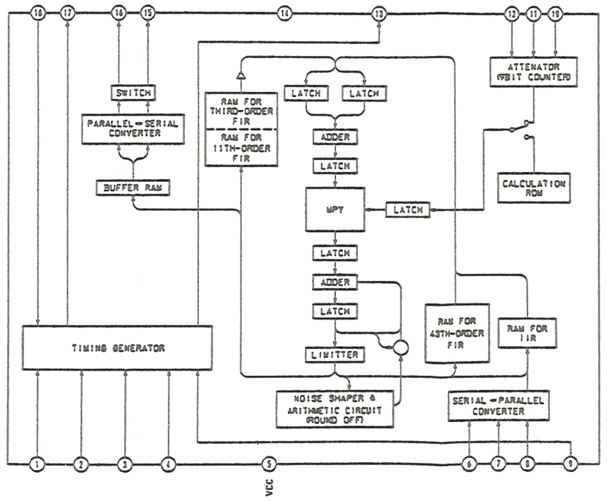
IC201 M5290P-16


-VCC
COLLECTER OUT(-)
EMITER OUT(-)
FB(-)
OUT
BALANCE ADJ
DERAY CAPACITY
RESET OUT
VOLT REF
CURRENT LIMITER
CURRENT LIMITER
HEAT PROTECT
DELAY
ON/OFF CONTROL
VCC
EMITER OUT(+)
COLLECTER OUT(+)
FB(+)
OUT(+5V)
REF IN
ON/OFF
GND

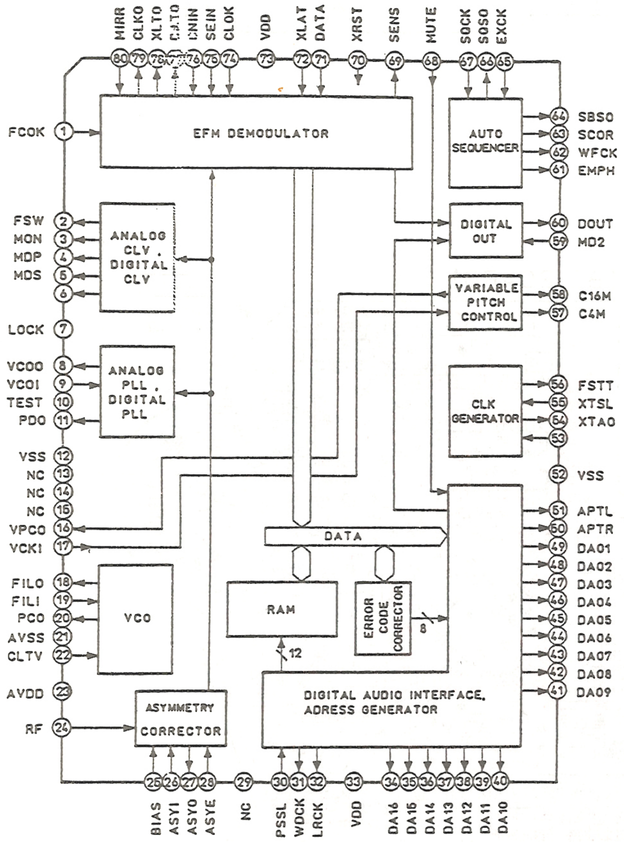
IC202 M5293L


GND
5k
27k
REFERENCE VOLTAGE
OUT
ON/OFF
REFERENCE VOLTAGE
OVERHEAT PROTECTION
OVERCURRENT LIMITTER
IN

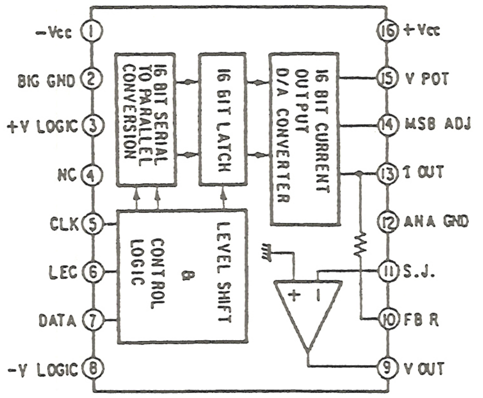
IC302 CXD2551P

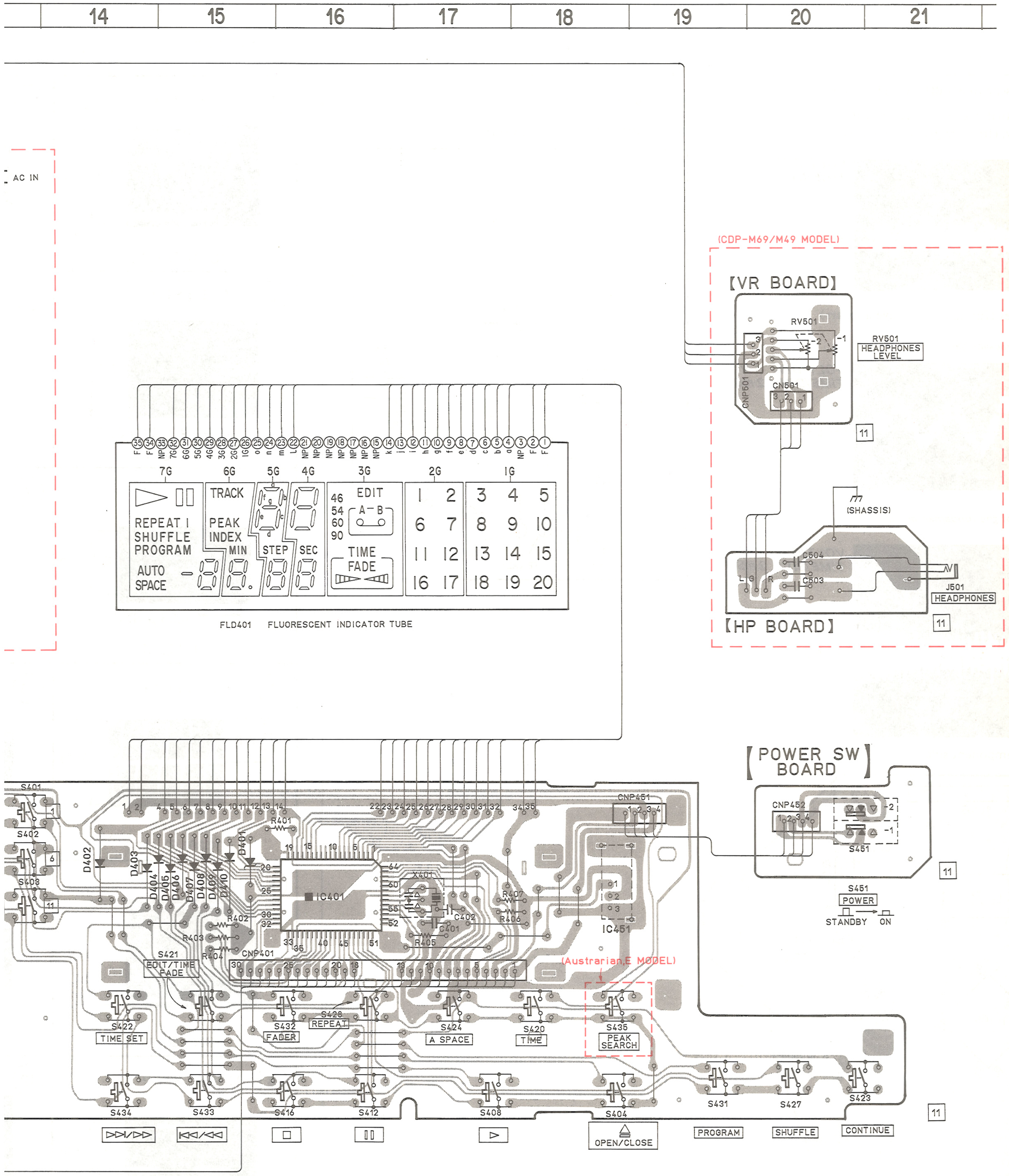

VSS
SWITCH
PARALLEL → SERIAL CONVERTER
BUFFER RAM
RAM FOR THIRD-ORDER FIR
RAM FOR 11TH-ORDER FIR
LATCH
LATCH
ADDER
LATCH
MPY
LATCH
LATCH
ADDER
LATCH
LIMITTER
NOISE SHAPER & ARITHMETIC CIRCUIT (ROUND OFF)
ATTENATOR (9BIT COUNTER)
CALCULATION ROM
RAM FOR 43TH-ORDER FIR
RAM FOR IIR
SERIAL → PARALLEL CONVERTER
TIMING GENERATOR
VCC

IC301 CXD2500Q


MIRR
CLKO
XLTO
DATO
CNIN
SEIN
CLOK
VDD
XLAT
DATA
XRST
SENS
XUGF
SQCK
SQSO
EXCK
FCOK
FSW
MON
MDP
MDS
LOCK
VCOO
VCOI
TEST
PDO
VSS
NC
NC
NC
VPCO
VCKI
FILO
FILI
PCO
AVSS
CLTV
AVDD
RF
EFM DEMODULATOR
ANALOG CLV, DIGITAL CLV
ANALOG PLL, DIGITAL PLL
VCO
AUTO SEQUENCER
DIGITAL OUT
VARIABLE PITCH CONTROL
CLK GENERATOR
DATA
RAM
ERROR CODE CORRECTOR
DIGITAL AUDIO INTERFACE, ADRESS GENERATOR
ASYMMETRY CORRECTOR
SBSO
SCOR
WFCK
EMPH
DOUT
MD2
C16M
C4M
FSTT
XTSL
XTAO
VSS
APTL
APTR
DA01
DA02
DA03
DA04
DA05
DA06
DA07
DA08
DA09
BIAS
ASYI
ASYO
ASYE
NC
PSSL
WDCK
LRCK
VDD
DA16
DA15
DA14
DA13
DA12
DA11
DA10

IC304, 305
PCM56P


-Vcc
BIG GND
+V LOGIC
NC
CLK
LEC
DATA
-V LOGIC
16 BIT SERIAL TO PARALLEL CONVERSION
16 BIT LATCH
16 BIT CURRENT OUTPUT D/A CONVERTER
CONTROL LOGIC
LEVEL SHIFT
+Vcc
V POT
MSB ADJ
I OUT
ANA GND
S.J.
FB R
V OUT


14
15
16
17
18
19
20
21
AC IN
(CDP-M69/M49 MODEL)
[VR BOARD]
RV501
RV501 HEADPHONES LEVEL
CNP501
CN501
(CHASSIS)
C504
C503
J501 HEADPHONES
[HP BOARD]
11
REPEAT I
SHUFFLE
PROGRAM
AUTO
SPACE
TRACK
PEAK
INDEX
MIN
STEP
SEC
EDIT
A-B
TIME
FADE
FLD401 FLUORESCENT INDICATOR TUBE
[POWER SW BOARD]
CNP452
S451
S451 POWER
STANDBY
ON
CNP451
IC401
X401
IC451
CNP401
R401
R402
R403
R404
R405
R406
R407
C401
C402
D401
D402
D403
D404
D405
D406
D407
D408
D409
D410
S401
S402
S403
S421 EDIT/TIME FADE
S422 TIME SET
S432 FADER
S428 REPEAT
S424 A SPACE
S420 TIME
(Australian,E MODEL)
S435 PEAK SEARCH
S434
S433
S416
S412
S408
S404 OPEN/CLOSE
S431 PROGRAM
S427 SHUFFLE
S423 CONTINUE

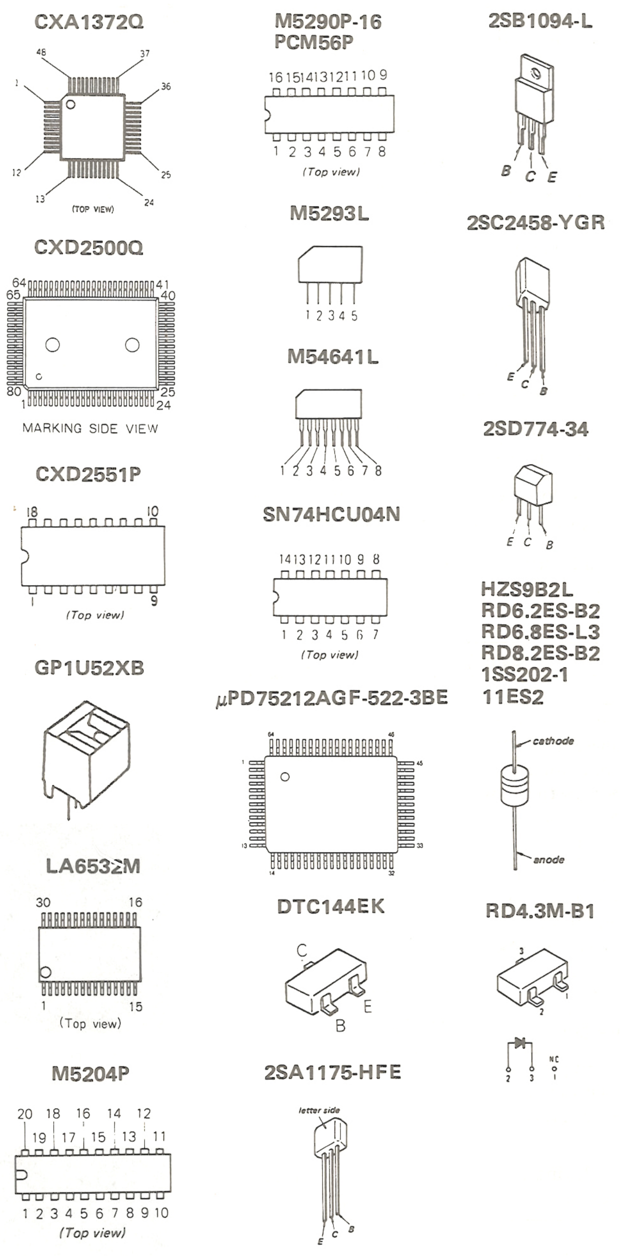
Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D101	H-3	IC101	I-2
D201	F-9	IC102	H-2
D202	F-8	IC103	H-2
D203	F-8	IC201	G-8
D204	F-9	IC202	G-10
D205	F-9	IC301	H-6
D208	G-9	IC302	F-6
D209	J-10	IC303	F-6
D301	F-8	IC304	E-7
D302	F-7	IC305	E-6
D401	H-15	IC306	C-6
D402	H-14	IC401	H-16
D403	H-14	IC451	H-18
D404	H-15		
D405	H-15	Q101	J-2
D406	H-15	Q201	G-8
D407	H-15	Q202	H-8
D408	H-15	Q203	G-9
D409	H-15	Q204	G-9
D410	H-15	Q206	G-9

Note:

- o—— : parts extracted from the component side.
- ■ : parts mounted on the conductor side.
- ● : Through hole.
- ▨ : Pattern on the side which is seen.
- ▨ : Pattern of the rear side.

Semiconductor Lead Layouts

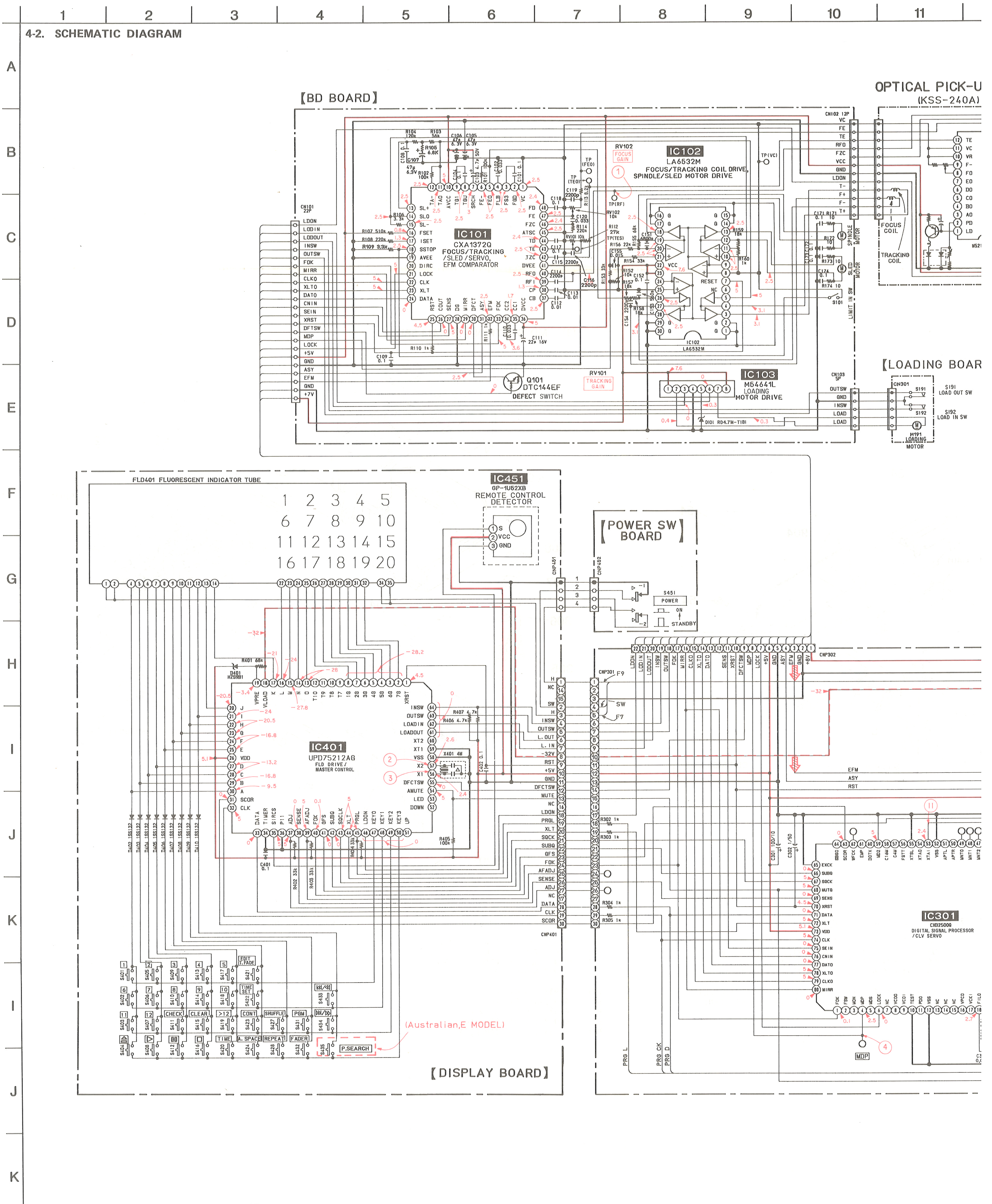

CXA1372Q
48
37
1
36
12
25
13
24
(TOP VIEW)
CXD2500Q
64
41
65
40
80
25
1
24
MARKING SIDE VIEW
CXD2551P
18
10
1
9
(Top view)
GP1U52XB
LA6532M
30
16
1
15
(Top view)
M5204P
20 18 16 14 12
19 17 15 13 11
1 2 3 4 5 6 7 8 9 10
(Top view)
M5290P-16
PCM56P
16 15 14 13 12 11 10 9
1 2 3 4 5 6 7 8
(Top view)
M5293L
1 2 3 4 5
M54641L
1 2 3 4 5 6 7 8
SN74HCU04N
14 13 12 11 10 9 8
1 2 3 4 5 6 7
(Top view)
μPD75212AGF-522-3BE
DTC144EK
C
E
B
2SA1175-HFE
letter side
E C B
2SB1094-L
B C E
2SC2458-YGR
E C B
2SD774-34
E C B
HZS9B2L
RD6.2ES-B2
RD6.8ES-L3
RD8.2ES-B2
1SS202-1
11ES2
cathode
anode
RD4.3M-B1
3
2
1
NC

Note :

- All capacitors are in μF unless otherwise noted. pF : μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼W or less unless otherwise specified.
- % : indicates tolerance.
- △ : internal component.
- ▬ : B+ Line
- ▬ ▬ : B− Line
- ☐ : adjustment for repair.

- Voltage and waveforms are dc with respect to ground under no-signal conditions.
- no mark : stop
- Voltages are taken with a VOM (input impedance 10M Ω). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : CD

4-2. SCHEMATIC DIAGRAM



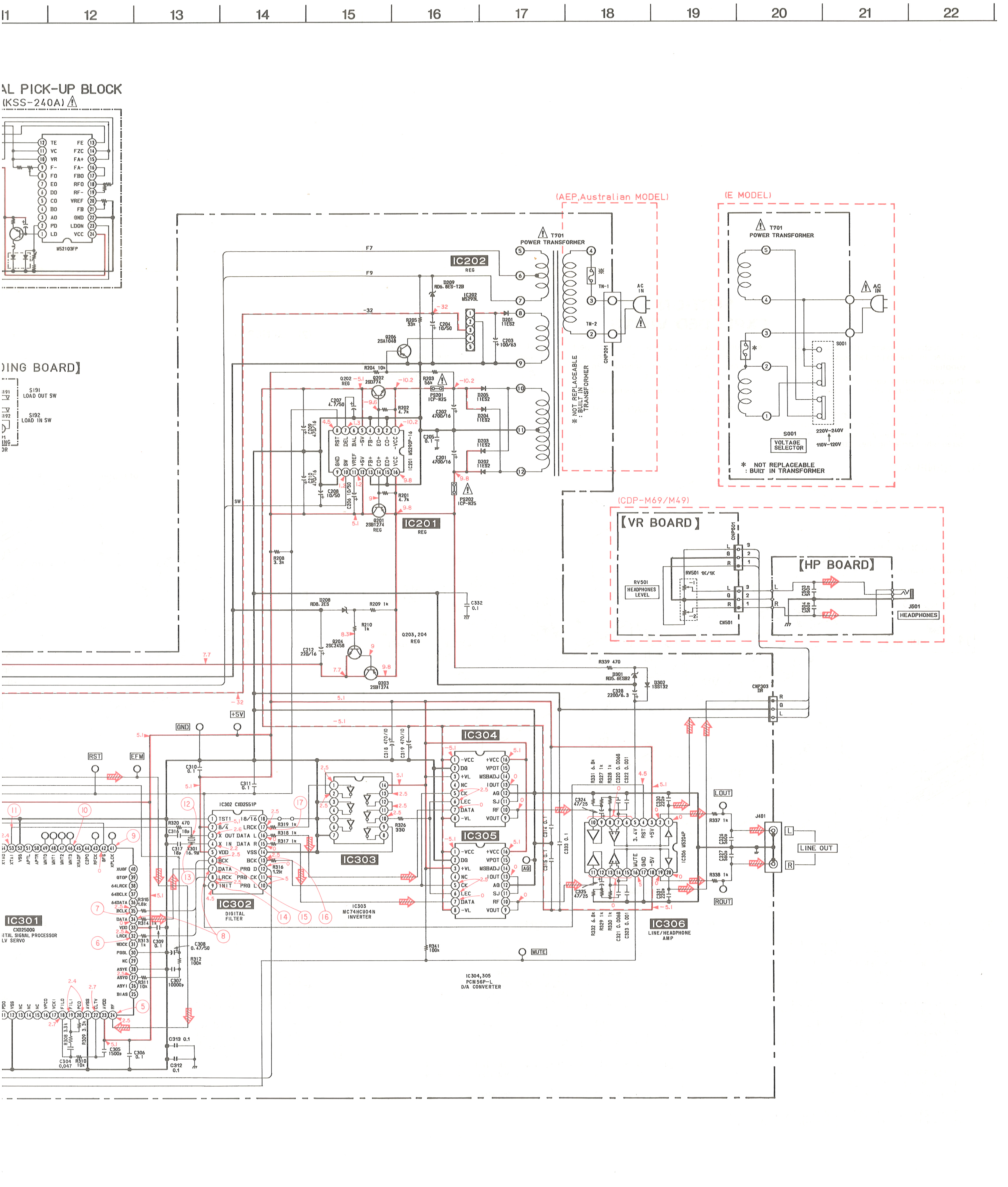
1 2 3 4 5 6 7 8 9 10 11
A B C D E F G H I J K
【BD BOARD】
OPTICAL PICK-UP (KSS-240A)
IC101 CXA1372Q FOCUS/TRACKING /SLED/SERVO, EFM COMPARATOR
IC102 LA6532M FOCUS/TRACKING COIL DRIVE, SPINDLE/SLED MOTOR DRIVE
IC103 M54641L LOADING MOTOR DRIVE
RV102 FOCUS GAIN
RV101 TRACKING GAIN
Q101 DTC144EF DEFECT SWITCH
CN101 22P
CN102 12P
CN103 5P
SPINDLE MOTOR
SLED MOTOR
LIMIT IN SW S101
FOCUS COIL
TRACKING COIL
【LOADING BOARD】
S191 LOAD OUT SW
S192 LOAD IN SW
M191 LOADING MOTOR
D101 RD4.7M-T1B1
FLD401 FLUORESCENT INDICATOR TUBE
IC451 GP-1U62XB REMOTE CONTROL DETECTOR
【POWER SW BOARD】
S451 POWER ON STANDBY
IC401 UPD75212AG FLD DRIVE/ MASTER CONTROL
X401 4M
D401 HZS9B1
IC301 CXD2500Q DIGITAL SIGNAL PROCESSOR /CLV SERVO
CNP301 CNP302 CNP401 CNP451 CNP452
(Australian,E MODEL)
P.SEARCH
【DISPLAY BOARD】
CHECK CLEAR >12 CONT SHUFFLE PGM TIME A.SPACE REPEAT FADER EDIT/T.FADE TIME SET

: to ground

edance 10M Ω).
rmal produc-

rmal produc-

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.



11
12
13
14
15
16
17
18
19
20
21
22
AL PICK-UP BLOCK
(KSS-240A) ⚠
M52103FP
DING BOARD]
S191 LOAD OUT SW
S192 LOAD IN SW
(AEP,Australian MODEL)
(E MODEL)
T701 POWER TRANSFORMER
AC IN
TH-1
TH-2
CNP201
※ NOT REPLACEABLE : BUILT IN TRANSFORMER
S001 VOLTAGE SELECTOR
220V–240V
110V–120V
* NOT REPLACEABLE : BUILT IN TRANSFORMER
IC202 REG
IC202 M5293L
D209 RD6.8ES-T2B
Q206 2SA1048
Q202 2SD774 REG
PS201 ICP-N25
PS202 ICP-N25
IC201 M5290P-16
IC201 REG
Q201 2SB1274 REG
D201 11ES2
D202 11ES2
D203 11ES2
D204 11ES2
D205 11ES2
F7
F9
SW
D208 RD8.2ES
Q204 2SC2458
Q203 2SB1274
Q203, 204 REG
(CDP-M69/M49)
[VR BOARD]
[HP BOARD]
RV501 HEADPHONES LEVEL
RV501 1K/1K
CNP501
CN501
J501 HEADPHONES
R339 470
D301 RD5.6ESB2
D302 1SS132
C328 2200/6.3
CNP303
GND
+5V
RST
EFM
IC304
IC305
IC304, 305 PCM56P-L D/A CONVERTER
IC303
IC303 MC74HCU04N INVERTER
IC302
IC302 CXD1155IP DIGITAL FILTER
IC301
CXD2500Q DIGITAL SIGNAL PROCESSOR CLV SERVO
IC306
IC306 M5204P
LINE/HEADPHONE AMP
LOUT
ROUT
J401
LINE OUT
L
R
MUTE
X301 16.9M

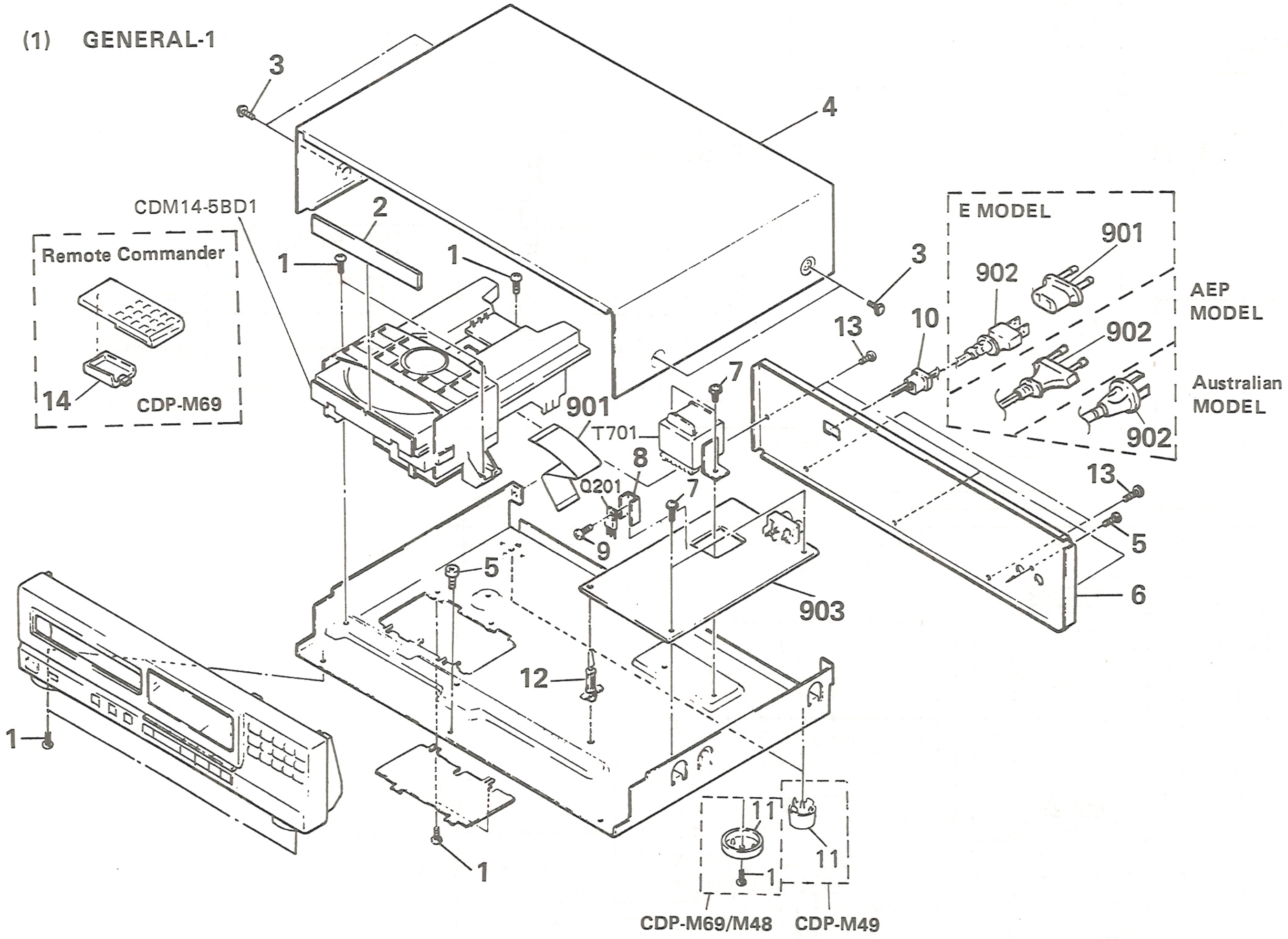
SECTION 5
EXPLODED VIEWS

NOTE:

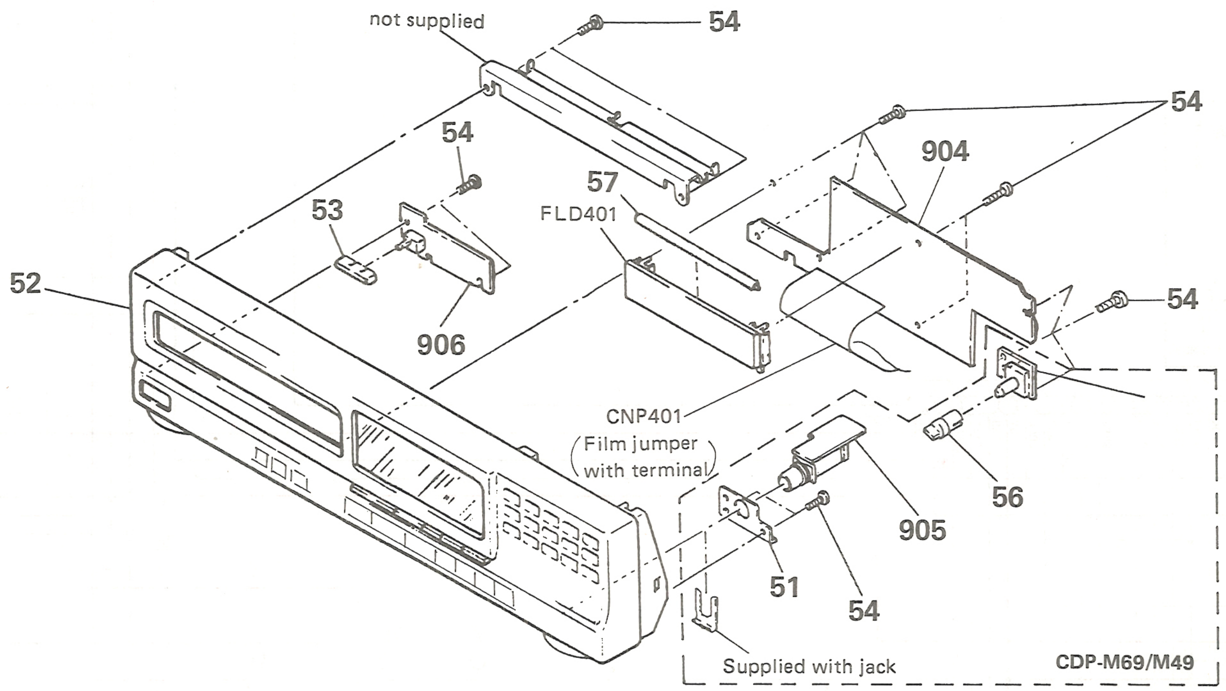
- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- Color Indication of Appearance Parts
  Example:
  (RED) ... KNOB, BALANCE (WHITE)
  ↑ Cabinet's Color ↑ Parts Color

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

(1) GENERAL-1


3
4
CDM14-5BD1
2
Remote Commander
1
1
14
CDP-M69
3
13
10
E MODEL
901
902
902
AEP MODEL
Australian MODEL
902
901
T701
8
Q201
7
7
9
13
5
6
5
903
12
1
1
11
1
11
CDP-M69/M48
CDP-M49

(2) GENERAL-2


not supplied
54
54
54
904
57
53
FLD401
52
54
906
CNP401
(Film jumper with terminal)
56
905
51
54
Supplied with jack
CDP-M69/M49

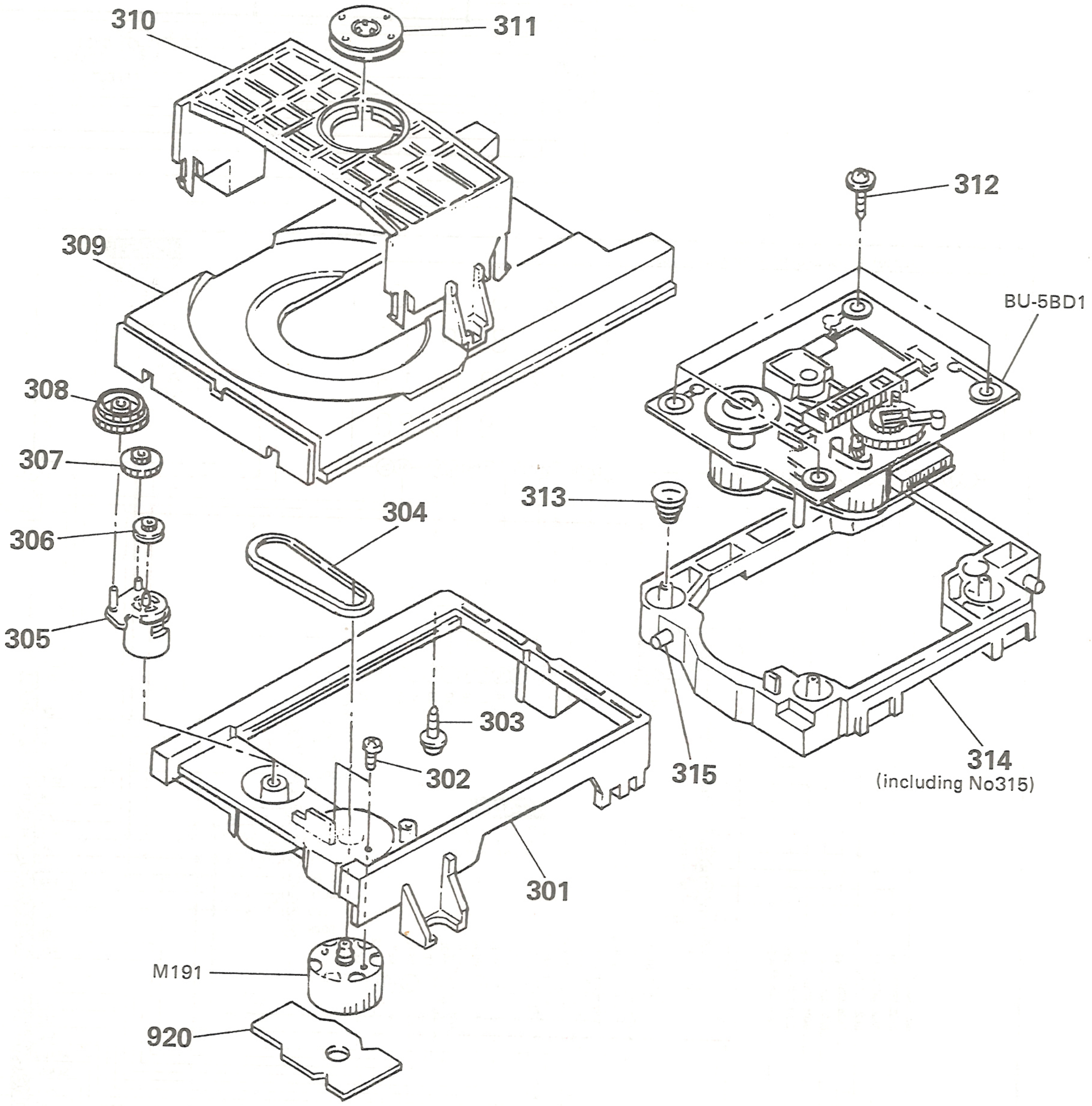
No.	Part No.	Description	Remarks
1	7-682-548-04	SCREW +BVTT 3X8 (S)	
2	4-929-534-01	PANEL, LOADING	
3	3-704-366-31	SCREW (CASE) (M3X6)	
4	4-919-376-31	CASE	
5	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
6	*4-927-388-11	(M69:AEP)...PANEL, BACK	
	*4-927-388-21	(M69:E).....PANEL, BACK	
	*4-927-388-41	(M49:AEP)...PANEL, BACK	
	*4-927-388-51	(M49:E).....PANEL, BACK	
	*4-927-388-81	(M49:AUS)...PANEL, BACK	
	*4-927-388-71	(M48:AEP)...PANEL, BACK	
7	2-383-566-00	SCREW +PTTWH 3X8	
8	4-902-345-01	HEAT SINK	
9	7-682-547-09	SCREW +B 3X6	
10	*3-703-244-00	(AEP,AUS)...BUSHING (2104), CORD	
	*3-703-571-11	(E).........BUSHING (4516), CORD	

No.	Part No.	Description	Remarks
11	4-933-601-01	(M49).......FOOT	
	*4-934-883-01	(M48/M69)...FOOT	
12	*4-924-098-31	HOLDER, PC BOARD	
13	7-682-547-09	SCREW +BVTT 3X6 (S)	
14	4-384-285-01	(M69)...COVER, BATTERY	
901	1-575-002-11	WIRE, FLAT TYPE (22 CORE)	
902	⚠.1-575-104-11	(E).....CORD, POWER	
	⚠.1-575-453-11	(AEP)...CORD, POWER	
	⚠.1-575-677-11	(AUS)...CORD, POWER	
903	*A-4617-495-A	(AEP,AUS)...MOUNTED PCB, MAIN	
	*A-4617-496-A	(E).........MOUNTED PCB, MAIN	
910	⚠.1-526-565-12	(AE)...AC PLUG ADAPTOR	

No.	Part No.	Description	Remarks
51	4-927-374-01	(M69/M49)...BRACKET (JACK)	
52	X-4917-595-1	(M69:AEP).....PANEL ASSY, FRONT	
	X-4917-602-1	(M69:E).......PANEL ASSY, FRONT	
	X-4917-596-1	(M48:AEP).....PANEL ASSY, FRONT	
	X-4917-597-1	(M49:AEP).....PANEL ASSY, FRONT	
	X-4917-603-1	(M49:E,AUS)...PANEL ASSY, FRONT	
53	4-929-535-01	BUTTON (POWER)	
54	7-685-134-19	SCREW +BTP 2.6X8 TYPE2 N-S	
56	4-933-116-01	(M69/M49)...KNOB (C, TYPE), VOL	
57	*4-927-353-01	SHEET (FL)	

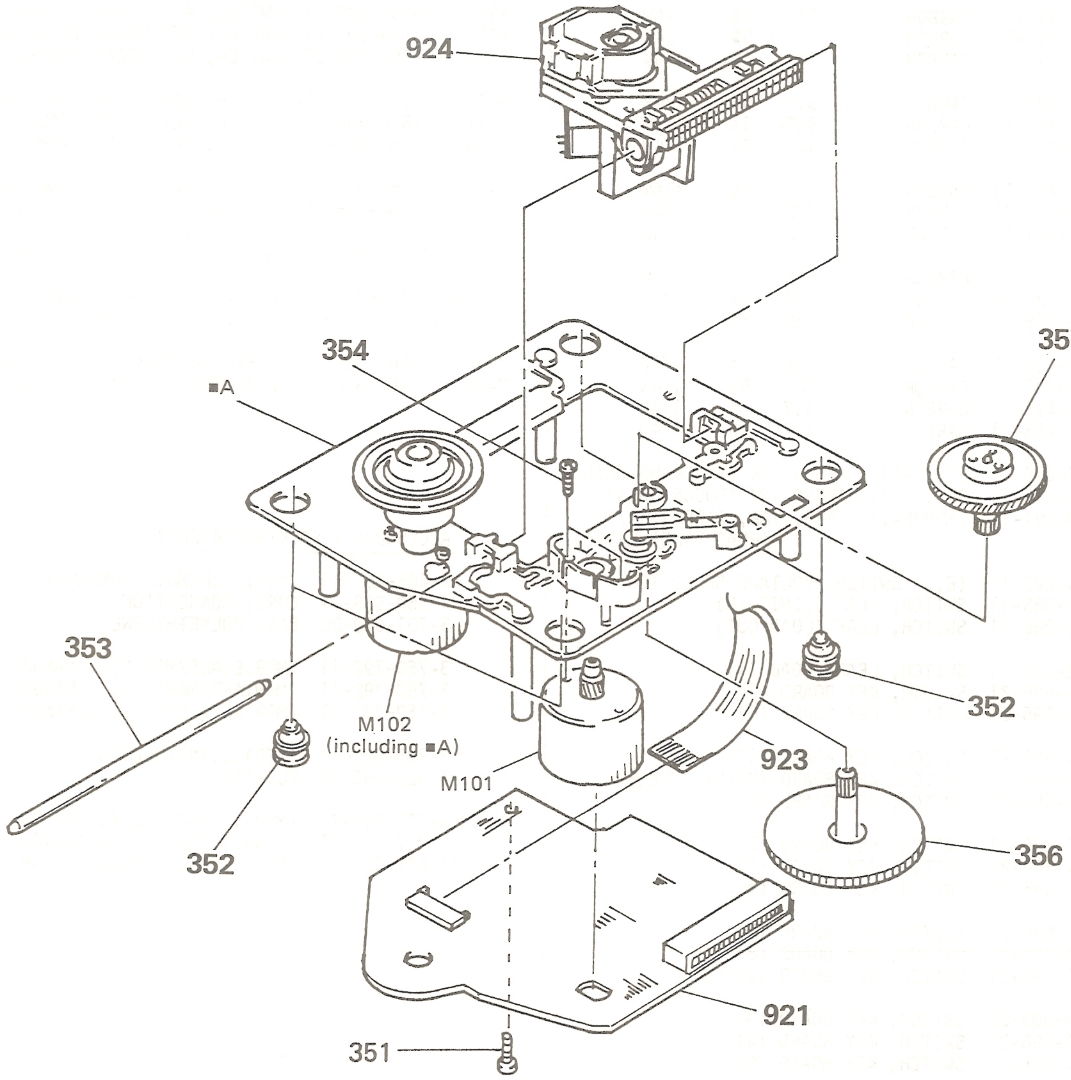
No.	Part No.	Description	Remarks
904	*1-634-642-11	PC BOARD, DISPLAY	
905	*1-634-643-11	(M49/M69)...PC BOARD, HP	
906	*1-634-641-11	PC BOARD, POWER SW	
908	*1-634-644-11	(M49/M69)...PC BOARD, VR	
CNP401	1-535-825-11	JUMPER, FILM (WITH TERMINAL)	
FLD401	1-519-556-11	INDICATOR TUBE, FLUORESCENT	

(3) MD SECTION-1 (CDM14-5BD1)


310
311
312
309
BU-5BD1
308
307
313
304
306
305
303
302
315
314
(including No315)
301
M191
920

No.	Part No.	Description	Remarks
301	4-933-111-01	CHASSIS (MD)	
302	7-621-775-10	SCREW +B 2.6X4	
303	*4-917-583-21	BRACKET, YOKE	
304	4-927-649-01	BELT	
305	4-933-109-01	CAM	
306	4-927-651-01	PULLEY (S)	
307	4-927-628-01	GEAR (C)	
308	4-933-107-01	GEAR (PL)	
309	4-933-112-01	TABLE, DISK	
310	4-933-110-01	HOLDER (MG)	
311	A-4675-347-A	MG ASSY	
312	4-933-134-01	SCREW (+PTPWH M2.6X6)	
313	4-917-541-01	SPRING (B)	
314	4-933-129-01	HOLDER (BU)(INCLUDET SHAFT CAM)	
315	4-933-108-01	SHAFT (CAM)	
920	*1-632-202-11	PC BOARD, LOADING	
M191	A-4604-363-A	MOTOR (L) ASSY (LOADING)	

(4) MD SECTION-2 (BU-5BD1)



No.	Part No.	Description	Remarks
351	7-685-134-19	SCREW +BTP 2.6X8 TYPE2 N-S	
352	4-933-126-01	INSULATOR (A)	
353	4-917-565-01	SHAFT, SLED	
354	7-621-255-15	SCREW +P 2X3	
355	4-917-567-01	GEAR (M)	
356	4-917-564-01	GEAR (P), FLATNESS	

No.	Part No.	Description	Remarks
921	*A-4617-161-A	MOUNTED PCB, BD	
923	1-575-001-11	WIRE, FLAT TYPE (12 CORE)	
924	⚠.8-848-144-11	DEVICE, OPTICAL KSS-240A (RP)	
M101	⚠.X-4917-504-1	ASSY, MOTOR (SLED)	
M102	⚠.X-4917-523-3	ASSY, MOTOR (SPINDLE)	

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

SECTION 6
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF: μF, PF: μμF.

RESISTORS
- All resistors are in ohms.
- F: nonflammable

COILS
- MMH: mH, UH: μH

SEMICONDUCTORS
In each case, U: μ, for example:
UA...: μA..., UPA...: μPA...,
UPC...: μPC, UPD...: μPD...

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref.No.	Part No.	Description			
901	1-575-002-11	WIRE, FLAT TYPE (22 CORE)			
902	⚠.1-575-104-11	(E).....CORD, POWER			
	⚠.1-575-453-11	(AEP)...CORD, POWER			
	⚠.1-575-677-11	(AUS)...CORD, POWER			
903	*A-4617-495-A	(AEP,AUS)...MOUNTED PCB, MAIN			
	*A-4617-496-A	(E).........MOUNTED PCB, MAIN			
904	*1-634-642-11	PC BOARD, DISPLAY			
905	*1-634-643-11	(M49/M69)...PC BOARD, HP			
906	*1-634-641-11	PC BOARD, POWER SW			
908	*1-634-644-11	(M49/M69)...PC BOARD, VR			
910	⚠.1-526-565-12	(AE)...AC PLUG ADAPTOR			
920	*1-632-202-11	PC BOARD, LOADING			
921	*A-4617-161-A	MOUNTED PCB, BD			
923	1-575-001-11	WIRE, FLAT TYPE (12 CORE)			
924	⚠.8-848-144-11	DEVICE, OPTICAL KSS-240A (RP)			
C101	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C102	1-163-989-11	CERAMIC CHIP	0.033MF	10%	25V
C103	1-126-094-11	ELECT	4.7MF	20%	16V
C104	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C105	1-126-154-11	ELECT	47MF	20%	6.3V
C106	1-126-154-11	ELECT	47MF	20%	6.3V
C107	1-126-154-11	ELECT	47MF	20%	6.3V
C108	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C109	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C110	1-163-989-11	CERAMIC CHIP	0.033MF	10%	25V
C111	1-131-367-00	TANTALUM	22MF	20%	16V
C112	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C113	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C114	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V
C115	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V
C116	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V
C117	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C118	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C119	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V
C120	1-163-989-11	CERAMIC CHIP	0.033MF	10%	25V
C151	1-163-019-00	CERAMIC CHIP	0.0068MF	10%	50V
C152	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C153	1-163-006-11	CERAMIC CHIP	560PF	10%	50V
C154	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V
C155	1-163-023-00	CERAMIC CHIP	0.015MF	10%	50V
C171	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C172	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C173	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C174	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C201	1-126-842-11	ELECT	4700MF	20%	16V

Ref.No.	Part No.	Description			
C202	1-126-842-11	ELECT	4700MF	20%	16V
C203	1-126-880-11	ELECT	100MF	20%	63V
C204	1-126-059-11	ELECT	10MF	20%	50V
C205	1-162-851-11	CERAMIC	0.1MF	20%	16V
C206	1-126-059-11	ELECT	10MF	20%	50V
C207	1-124-045-00	ELECT	4.7MF	20%	50V
C208	1-126-059-11	ELECT	10MF	20%	50V
C209	1-126-012-11	ELECT	470MF	20%	16V
C210	1-126-012-11	ELECT	470MF	20%	16V
C212	1-126-024-11	ELECT	220MF	20%	16V
C301	1-124-994-11	ELECT	100MF	20%	10V
C302	1-126-301-11	ELECT	1MF	20%	50V
C304	1-136-161-00	FILM	0.047MF	5%	50V
C305	1-161-374-11	CERAMIC	0.0015MF	30%	16V
C306	1-164-159-11	CERAMIC	0.1MF		50V
C307	1-162-306-11	CERAMIC	0.01MF	20%	16V
C308	1-126-300-11	ELECT	0.47MF	20%	50V
C309	1-164-159-11	CERAMIC	0.1MF		50V
C310	1-164-159-11	CERAMIC	0.1MF		50V
C311	1-164-159-11	CERAMIC	0.1MF		50V
C312	1-164-159-11	CERAMIC	0.1MF		50V
C313	1-164-159-11	CERAMIC	0.1MF		50V
C314	1-164-159-11	CERAMIC	0.1MF		50V
C315	1-164-159-11	CERAMIC	0.1MF		50V
C316	1-162-205-31	CERAMIC	18PF	5%	50V
C317	1-162-205-31	CERAMIC	18PF	5%	50V
C318	1-124-997-11	ELECT	470MF	20%	10V
C319	1-124-997-11	ELECT	470MF	20%	10V
C320	1-130-481-00	MYLAR	0.0068MF	5%	50V
C321	1-130-481-00	MYLAR	0.0068MF	5%	50V
C322	1-130-471-00	MYLAR	0.001MF	5%	50V
C323	1-130-471-00	MYLAR	0.001MF	5%	50V
C324	1-123-332-00	ELECT	47MF	20%	25V
C325	1-123-332-00	ELECT	47MF	20%	25V
C326	1-162-291-31	CERAMIC	560PF	10%	50V
C327	1-162-291-31	CERAMIC	560PF	10%	50V
C328	1-124-893-11	ELECT	2200MF	20%	6.3V
C330	1-162-286-31	CERAMIC	220PF	10%	50V
C331	1-162-286-31	CERAMIC	220PF	10%	50V
C332	1-164-159-11	CERAMIC	0.1MF		50V
C333	1-164-159-11	CERAMIC	0.1MF		50V
C401	1-164-159-11	CERAMIC	0.1MF		50V
C402	1-164-159-11	CERAMIC	0.1MF		50V
C503	1-162-291-31	(M49/M69)...CERAMIC	560PF	10%	50V
C504	1-162-291-31	(M49/M69)...CERAMIC	560PF	10%	50V

Ref.No.	Part No.	Description
CN101	1-568-796-11	SOCKET, CONNECTOR 22P
CN102	1-568-795-11	SOCKET, CONNECTOR 12P
CN103	*1-564-721-11	PIN, CONNECTOR (SMALL TYPE) 5P
CN301	*1-564-707-11	PIN, CONNECTOR (SMALL TYPE) 5P
CNP201	*1-564-321-00	PIN, CONNECTOR 2P
CNP301	*1-568-933-11	SOCKET, CONNECTOR 30P
CNP302	*1-568-822-11	SOCKET, CONNECTOR 22P
CNP303	*1-564-337-61	PIN, CONNECTOR 3P
CNP401	1-535-825-11	JUMPER, FILM (WITH TERMINAL)
D101	8-719-105-72	DIODE RD4.7M-B1
D201	8-719-200-82	DIODE 11ES2
D202	8-719-200-82	DIODE 11ES2
D203	8-719-200-82	DIODE 11ES2
D204	8-719-200-82	DIODE 11ES2
D205	8-719-200-82	DIODE 11ES2
D208	8-719-110-08	DIODE RD8.2ES-B2
D209	8-719-120-90	DIODE RD6.8ES-L3
D301	8-719-123-54	DIODE RD6.2ES-B2
D302	8-719-107-94	DIODE 1SS202-1
D401	8-719-933-57	DIODE HZS9B2L
D402	8-719-107-94	DIODE 1SS202-1
D403	8-719-107-94	DIODE 1SS202-1
D404	8-719-107-94	DIODE 1SS202-1
D405	8-719-107-94	DIODE 1SS202-1
D406	8-719-107-94	DIODE 1SS202-1
D407	8-719-107-94	DIODE 1SS202-1
D408	8-719-107-94	DIODE 1SS202-1
D409	8-719-107-94	DIODE 1SS202-1
D410	8-719-107-94	DIODE 1SS202-1
FLD401	1-519-556-11	INDICATOR TUBE, FLUORESCENT
IC101	8-752-037-33	IC CXA1372Q
IC102	8-759-821-94	IC LA6532M
IC103	8-759-633-65	IC M54641L
IC201	8-759-630-21	IC M5290P-16
IC202	8-759-633-42	IC M5293L
IC301	8-752-333-31	IC CXD2500Q
IC302	8-752-334-06	IC CXD2551P
IC303	8-759-917-18	IC SN74HCU04N
IC304	8-759-998-22	IC PCM56P
IC305	8-759-998-22	IC PCM56P
IC306	8-759-631-39	IC M5204P
IC401	8-759-148-63	IC UPD75212AGF-522-3BE
IC451	8-749-920-83	IC GP1U52XB
J101	1-216-295-00	METAL GLAZE 0 5% 1/10W
J102	1-216-295-00	METAL GLAZE 0 5% 1/10W
J401	1-566-921-11	JACK, PIN 2P (LINE OUT)
J501	1-568-519-21	(M69/M49)...JACK, LARGE TYPE (HEADPHONES)
M101	⚠.X-4917-504-1	ASSY, MOTOR (SLED)
M102	⚠.X-4917-523-3	ASSY, MOTOR (SPINDLE)
M191	A-4604-363-A	MOTOR (L) ASSY (LOADING)
PS201	⚠.1-532-685-00	LINK, IC
PS202	⚠.1-532-637-00	LINK, IC
Q101	8-729-901-01	TRANSISTOR DTC144EK
Q201	8-729-111-67	TRANSISTOR 2SB1094-L
Q202	8-729-140-96	TRANSISTOR 2SD774-34

Ref.No.	Part No.	Description
Q203	8-729-111-67	TRANSISTOR 2SB1094-L
Q204	8-729-230-45	TRANSISTOR 2SC2458-YGR
Q206	8-729-119-76	TRANSISTOR 2SA1175-HFE
R101	1-216-097-00	METAL GLAZE 100K 5% 1/10W
R102	1-216-097-00	METAL GLAZE 100K 5% 1/10W
R103	1-216-091-00	METAL GLAZE 56K 5% 1/10W
R104	1-216-099-00	METAL GLAZE 120K 5% 1/10W
R105	1-216-069-00	METAL GLAZE 6.8K 5% 1/10W
R106	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W
R107	1-216-114-00	METAL GLAZE 510K 5% 1/10W
R108	1-216-105-00	METAL GLAZE 220K 5% 1/10W
R109	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W
R110	1-216-049-00	METAL GLAZE 1K 5% 1/10W
R111	1-216-049-00	METAL GLAZE 1K 5% 1/10W
R112	1-216-083-00	METAL GLAZE 27K 5% 1/10W
R113	1-216-071-00	METAL GLAZE 8.2K 5% 1/10W
R114	1-216-105-00	METAL GLAZE 220K 5% 1/10W
R152	1-216-073-00	METAL GLAZE 10K 5% 1/10W
R153	1-216-085-00	METAL GLAZE 33K 5% 1/10W
R154	1-216-085-00	METAL GLAZE 33K 5% 1/10W
R155	1-216-093-00	METAL GLAZE 68K 5% 1/10W
R156	1-216-081-00	METAL GLAZE 22K 5% 1/10W
R157	1-216-079-00	METAL GLAZE 18K 5% 1/10W
R158	1-216-079-00	METAL GLAZE 18K 5% 1/10W
R159	1-216-079-00	METAL GLAZE 18K 5% 1/10W
R160	1-216-049-00	METAL GLAZE 1K 5% 1/10W
R171	1-216-001-00	METAL GLAZE 10 5% 1/10W
R172	1-216-001-00	METAL GLAZE 10 5% 1/10W
R173	1-216-001-00	METAL GLAZE 10 5% 1/10W
R174	1-216-001-00	METAL GLAZE 10 5% 1/10W
R201	1-249-425-11	CARBON 4.7K 5% 1/4W
R202	1-249-425-11	CARBON 4.7K 5% 1/4W
R203	1-249-438-11	CARBON 56K 5% 1/4W
R204	1-249-429-11	CARBON 10K 5% 1/4W
R205	1-249-435-11	CARBON 33K 5% 1/4W
R208	1-249-423-11	CARBON 3.3K 5% 1/4W
R209	1-249-417-11	CARBON 1K 5% 1/4W
R210	1-249-417-11	CARBON 1K 5% 1/4W
R302	1-249-417-11	CARBON 1K 5% 1/4W
R303	1-249-417-11	CARBON 1K 5% 1/4W
R304	1-249-417-11	CARBON 1K 5% 1/4W
R305	1-249-417-11	CARBON 1K 5% 1/4W
R308	1-249-423-11	CARBON 3.3K 5% 1/4W
R309	1-249-423-11	CARBON 3.3K 5% 1/4W
R310	1-249-429-11	CARBON 10K 5% 1/4W
R311	1-249-429-11	CARBON 10K 5% 1/4W
R312	1-249-441-11	CARBON 100K 5% 1/4W
R313	1-249-417-11	CARBON 1K 5% 1/4W
R314	1-249-417-11	CARBON 1K 5% 1/4W
R315	1-249-420-11	CARBON 1.8K 5% 1/4W
R316	1-249-418-11	CARBON 1.2K 5% 1/4W
R317	1-249-417-11	CARBON 1K 5% 1/4W
R318	1-249-417-11	CARBON 1K 5% 1/4W
R319	1-249-417-11	CARBON 1K 5% 1/4W
R320	1-249-413-11	CARBON 470 5% 1/4W
R326	1-249-411-11	CARBON 330 5% 1/4W
R327	1-249-417-11	CARBON 1K 5% 1/4W

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref.No.	Part No.	Description
R328	1-249-417-11	CARBON 1K 5% 1/4W
R329	1-249-417-11	CARBON 1K 5% 1/4W
R330	1-249-417-11	CARBON 1K 5% 1/4W
R331	1-249-427-11	CARBON 6.8K 5% 1/4W
R332	1-249-427-11	CARBON 6.8K 5% 1/4W
R337	1-249-417-11	CARBON 1K 5% 1/4W
R338	1-249-417-11	CARBON 1K 5% 1/4W
R339	1-249-413-11	CARBON 470 5% 1/4W
R341	1-249-441-11	CARBON 100K 5% 1/4W
R401	1-249-439-11	CARBON 68K 5% 1/4W
R402	1-249-435-11	CARBON 33K 5% 1/4W
R403	1-249-435-11	CARBON 33K 5% 1/4W
R404	1-249-435-11	CARBON 33K 5% 1/4W
R405	1-249-441-11	CARBON 100K 5% 1/4W
R406	1-249-425-11	CARBON 4.7K 5% 1/4W
R407	1-249-425-11	CARBON 4.7K 5% 1/4W
RV101	1-238-016-11	RES, ADJ, CARBON 10K (TRACKING GAIN)
RV102	1-238-016-11	RES, ADJ, CARBON 10K (FOCUS GAIN)
RV501	1-238-884-11	(M69/M49)...RES, VAR, CARBON 1K/1K (HEADPHONES LEVEL)
S001	⚠.1-571-722-11	(E)...SWITCH, VOLTAGE SELECTION
S101	1-572-085-11	SWITCH, LEAF (LIMIT IN)
S191	1-572-086-11	SWITCH, LEAF (LOAD OUT)
S192	1-572-086-11	SWITCH, LEAF (LOAD IN)
S401	1-554-596-21	SWITCH, KEY BOARD (1)
S402	1-554-596-21	SWITCH, KEY BOARD (6)
S403	1-554-596-21	SWITCH, KEY BOARD (11)
S404	1-554-596-21	SWITCH, KEY BOARD (OPEN/CLOSE ⏏)
S405	1-554-596-21	SWITCH, KEY BOARD (2)
S406	1-554-596-21	SWITCH, KEY BOARD (7)
S407	1-554-596-21	SWITCH, KEY BOARD (12)
S408	1-554-596-21	SWITCH, KEY BOARD (▶)
S409	1-554-596-21	SWITCH, KEY BOARD (3)
S410	1-554-596-21	SWITCH, KEY BOARD (8)
S411	1-554-596-21	SWITCH, KEY BOARD (CHECK)
S412	1-554-303-21	SWITCH, KEY BOARD (❚❚)
S413	1-554-596-21	SWITCH, KEY BOARD (4)
S414	1-554-596-21	SWITCH, KEY BOARD (9)
S415	1-554-596-21	SWITCH, KEY BOARD (CLEAR)
S416	1-554-596-21	SWITCH, KEY BOARD (■)
S417	1-554-596-21	SWITCH, KEY BOARD (5)
S418	1-554-303-21	SWITCH, KEY BOARD (10)
S419	1-554-596-21	SWITCH, KEY BOARD (>12)
S420	1-554-596-21	SWITCH, KEY BOARD (TIME)
S421	1-554-596-21	SWITCH, KEY BOARD (EDIT/TIME FADE)
S422	1-554-596-21	SWITCH, KEY BOARD (TIME SET)
S423	1-554-303-21	SWITCH, KEY BOARD (CONTINUE)

Ref.No.	Part No.	Description
S424	1-554-596-21	SWITCH, KEY BOARD (A SPACE)
S427	1-554-303-21	SWITCH, KEY BOARD (SHUFFLE)
S428	1-554-596-21	SWITCH, KEY BOARD (REPEAT)
S431	1-554-596-21	SWITCH, KEY BOARD (PROGRAM)
S432	1-554-596-21	SWITCH, KEY BOARD (FADER)
S433	1-554-303-21	SWITCH, KEY BOARD (⏮/◀◀)
S434	1-554-596-21	SWITCH, KEY BOARD (⏭/▶▶)
S435	1-554-596-21	(E,AUS)...SWITCH, KEY BOARD (PEAK SEARCH)
S451	1-571-305-11	SWITCH, PUSH (1 KEY)(POWER)
T701	⚠.1-449-922-11	(AEP,AUS)...TRANSFORMER, POWER
T701	⚠.1-449-923-11	(E).........TRANSFORMER, POWER
X301	1-567-926-11	VIBRATOR, CRYSTAL (16.9MHz)
X401	1-567-819-11	VIBRATOR, CERAMIC (4MHz)

ACCESSORY & PACKING MATERIAL

1-465-281-11	(M69)...REMOTE COMMANDER
1-559-533-11	CORD, CONNECTION
3-701-630-00	BAG, POLYETHYLENE
3-750-792-11	(M49:E,AUS/M69:E)...MANUAL, INSTRUCTION
3-750-792-41	(M49:AEP/M69).......MANUAL, INSTRUCTION
3-750-792-51	(M49:AEP/M69).......MANUAL, INSTRUCTION
*3-795-629-11	(AEP)...INSTRUCTION
*4-922-998-01	CUSHION
*4-927-392-41	(M69)...INDIVIDUAL CARTON
*4-927-392-51	(M49)...INDIVIDUAL CARTON
*4-927-392-61	(M48)...INDIVIDUAL CARTON

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

9-955-776-11

Sony Corporation
Audio Group

English
90C0670-1
Printed in Japan
©1990.3
Published by Customer Relations and Service Group